HOARD'S DAIRYMAN

OCTOBER 25, 1957

THE NATIONAL DAIRY FARM MAGAZINE

CHORE-BOY Now Provides The First Complete, One-Man, Milk Producing Plant

- Includes An 18' x 44' Ready-Built Milking Parlor and Milk Room
- 12 Herringbone Stalls and 12 Individual Auger Feeders
- A 6 Unit Pipeline Milking System—With 6 Roll-O-Measures

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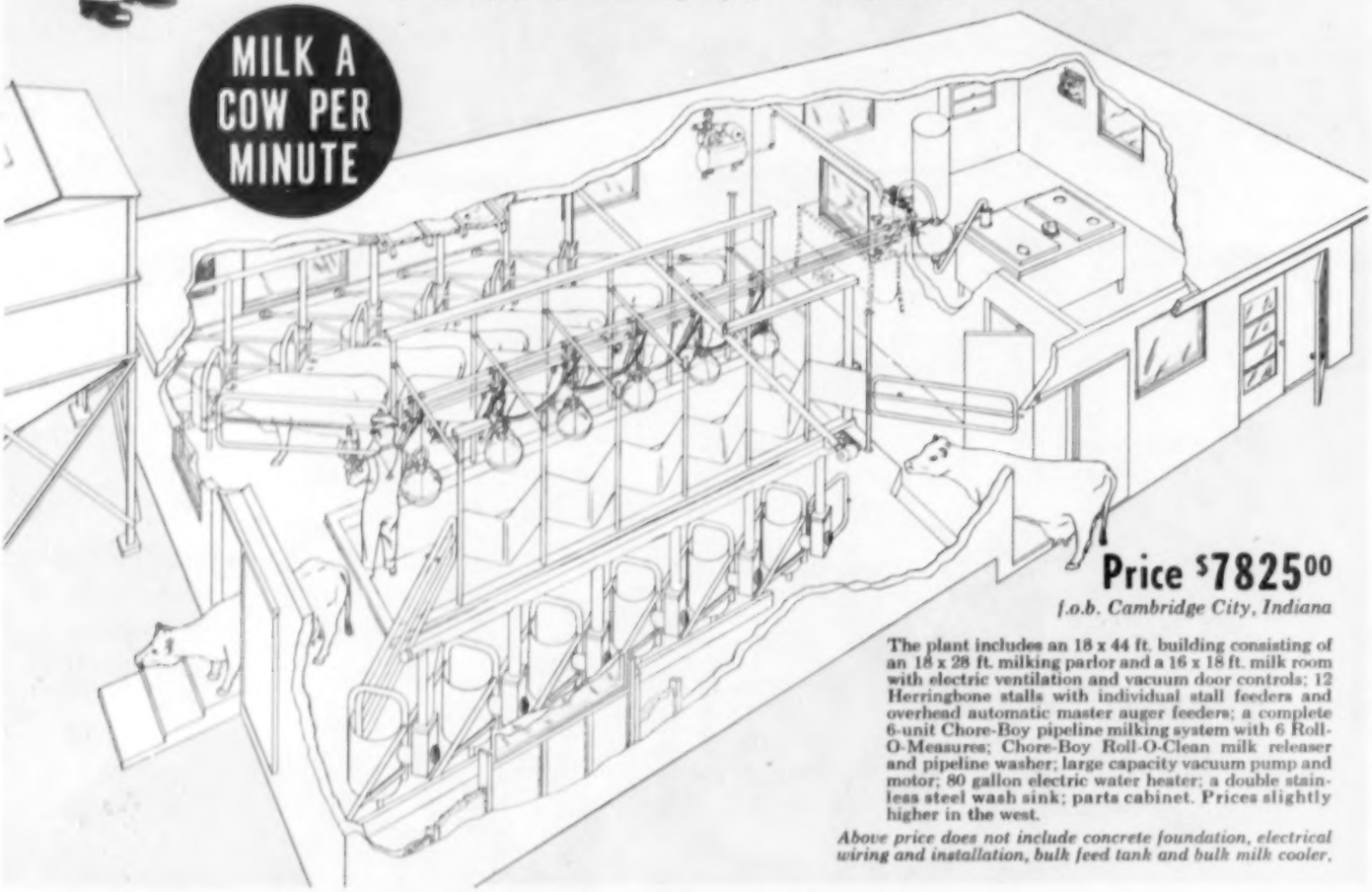

Price $7825.00

f.o.b. Cambridge City, Indiana

The plant includes an 18 x 44 ft. building consisting of an 18 x 28 ft. milking parlor and a 16 x 18 ft. milk room with electric ventilation and vacuum door controls; 12 Herringbone stalls with individual stall feeders and overhead automatic master auger feeders; a complete 6-unit Chore-Boy pipeline milking system with 6 Roll-O-Measures; Chore-Boy Roll-O-Clean milk releaser and pipeline washer; large capacity vacuum pump and motor; 80 gallon electric water heater; a double stainless steel wash sink; parts cabinet. Prices slightly higher in the west.

Above price does not include concrete foundation, electrical wiring and installation, bulk feed tank and bulk milk cooler.

This new Chore-Boy One Man Milk Producing Plant represents the greatest advance in dairy farm milk production since the original pail milker was introduced over 50 years ago. It will provide —

- Greatest milk production per man.
- Maximum milk production per cow.
- Lowest bacteria count per c.c. of milk.
- Most profit per dairy farm.

With Chore-Boy Herringbone stalls, cows are handled in batches. This saves time, since a group will move almost as fast as a single cow. There are no gates to operate between cows. Cows are parked at a 30 degree angle and nest into each other. Cows like this system since they love company. Heifers and nervous cows are quieted. The operator is never more than 3 feet from a cow's udder. Walking is reduced to the absolute minimum.

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Milk is drawn into the new Chore-Boy Roll-O-Measure, so that you can see exactly how much milk each cow produces.

Pyrex glass Roll-O-Clean Releaser and Pyrex glass pipe show at a glance that your milking system is clean—"Dirt can't hide behind glass." The Chore-Boy cleaning-in-place method of washing is simple, effective, fast and easy. Chore-Boy users are consistently getting amazingly low bacteria counts.

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If you prefer to provide your own building you can, of course, obtain all of the advantages of Chore-Boy Herringbone Stalls and Pipeline Milking. All or any part of the system may be purchased. Larger, 2-man, 16 and 20 cow systems are available. Write today for complete information.

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MICHIGAN: Michigan Farm Bureau Services, Inc.

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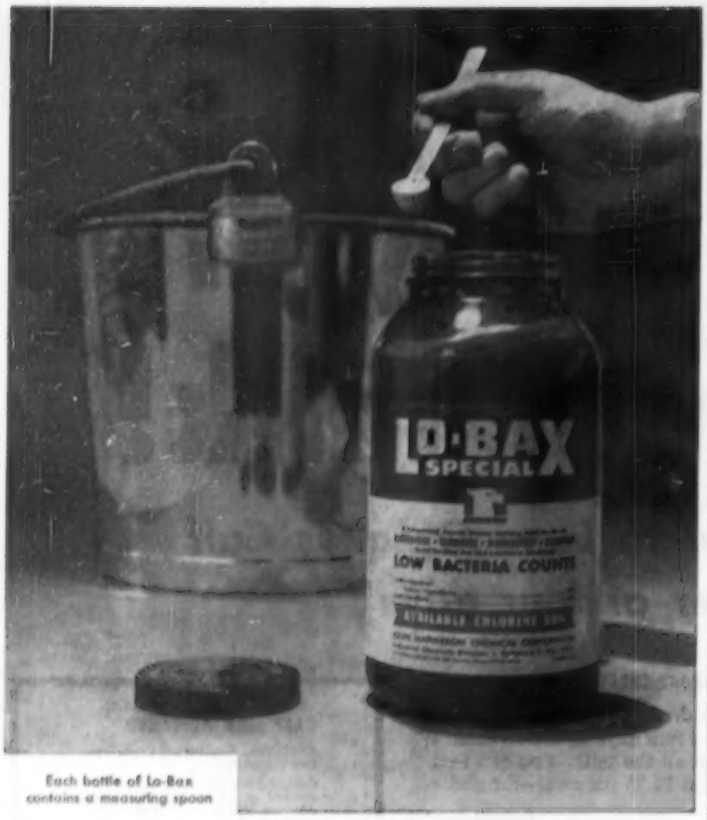

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HOARD'S DAIRYMAN

The National Dairy Farm Magazine

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October 25, 1957

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COVER PICTURE

On hand for the evening milking is A. J. Johnson, Elkader, Iowa, whose Rockcrest Farm of 500 acres is the home of one of the outstanding registered Holstein herds in the Midwest. Of the 125 head in the Burke-bred herd, 65 are in milk. The herd has averaged over 500 pounds butterfat the past few years.

Johnson is a director of the Holstein-Friesian Association of America, and is active in local, state, and national affairs.

This is a staff photo.

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Hoard's Dairyman is published on the 10th and 25th of each month. Advertising copy for the 10th of the month issue must be received before the 15th of the preceding month. For the 25th of the month issue, copy must be received by the 1st of that month.

Washington Dairygrams

LOWER PRICES NOT THE ANSWER SAYS NATIONAL CONFERENCE OF COMMODITY ORGANIZATIONS. LATE SEPTEMBER MEETING RECOMMENDED MORE REALISTIC PARITY YARDSTICK, IMPORT LICENSES, AUTHORITY FOR SELF-HELP PRINCIPLE IN SURPLUS MANAGEMENT. TENTATIVELY ENDORSED IMPROVED SOIL BANK, INCLUSION OF ALL FEED GRAINS (INCLUDING CORN) IN ONE PROGRAM.

TWO-PRICE PLAN FOR RICE BEING DEBATED AS U.S.D.A. HOLDS CONFERENCE. CONGRESS AUTHORIZED TRIAL. SECRETARY MAY INITIATE IT. STRONG SUPPORT EXCEPT FROM STATE FARM BUREAU LEADERS. BENSON WHEN QUERIED DID NOT OPPOSE IT. GOES TO ADVISORY COMMISSION. BENSON SAID RICE APPROPRIATE TEST COMMODITY.

NO ACTION YET ON DAIRY PRICE SUPPORTS AFTER NEXT APRIL 1. SECRETARY MUST DECIDE LEVEL. HEAVY COSTS. OTHER COMMODITIES CRITICAL. BENSON SAYS HE WILL GIVE A "LOT OF STUDY TO THE PROBLEM" AND WANTS TO "DO THE THING THAT IS BEST FOR THE INDUSTRY."

INFLATION CAN BE CHECKED ACCORDING TO GOVERNOR OF FEDERAL RESERVE BOARD. SAYS DIPS AND CRESTS OF DEFLATION AND INFLATION CAN BE LEVELED OUT TO BENEFIT OF NET FARM INCOME. EXPRESSED DEEP CONCERN OVER EFFECT OF INFLATION ON FARM COSTS.

SOIL BANK SUPPORTED BY ASSISTANT SECRETARY OF AGRICULTURE McLAIN. LOOKS TO CONSERVATION RESERVE GOAL OF 25 TO 35 MILLION ACRES IN THREE OR FOUR YEARS. ACREAGE RESERVE CONSIDERED TEMPORARY MEASURE.

BOOST IN COST OF LIVING REPORTED. ALL COSTS UP BUT FINGER POINTED AT FOOD. GROCERS COUNTER-ATTACK, ASSERT WORKER'S WAGE BUYS MORE. SINCE 1947-49, FOOD PRICES INCREASED ABOUT 15 PER CENT WHILE WEEKLY WAGE UP OVER 50 PER CENT.

★ ★ ★

In YOUR next issue!

HOARD'S DAIRYMAN ROUND TABLE . . . The 7th annual series of this great feature is launched with "My favorite grain mixture for the milking herd." Owners of eight high-producing herds reveal their rations.

NATIONAL SHOW REPORTS . . . come to you direct from the arenas of the Dairy Cattle Congress and the International Dairy Show. Placings, commentary, and ringside notes by a well-qualified observer.

HARDWARE DISEASE . . . can be prevented. A report on 400 Colorado cows which have carried small magnets in their stomachs.

YOUR NEW MILK HOUSE . . . can be connected to your dairy barn in nine different ways. Agricultural engineer, Don Bates, presents sketches, pictures, and advice for anyone considering a new milk house.

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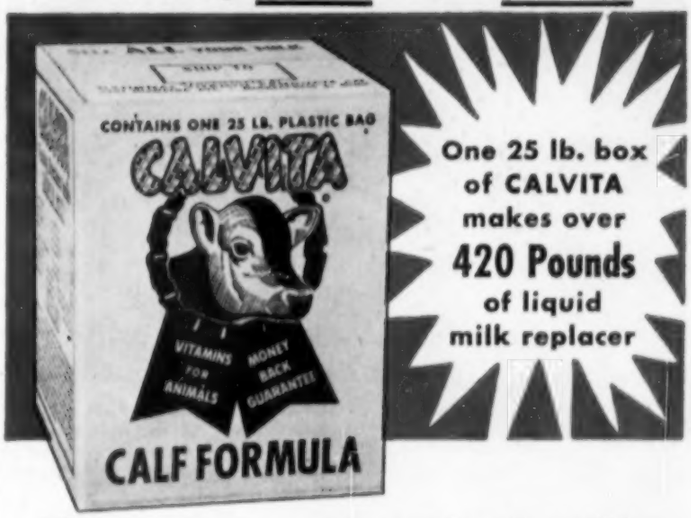
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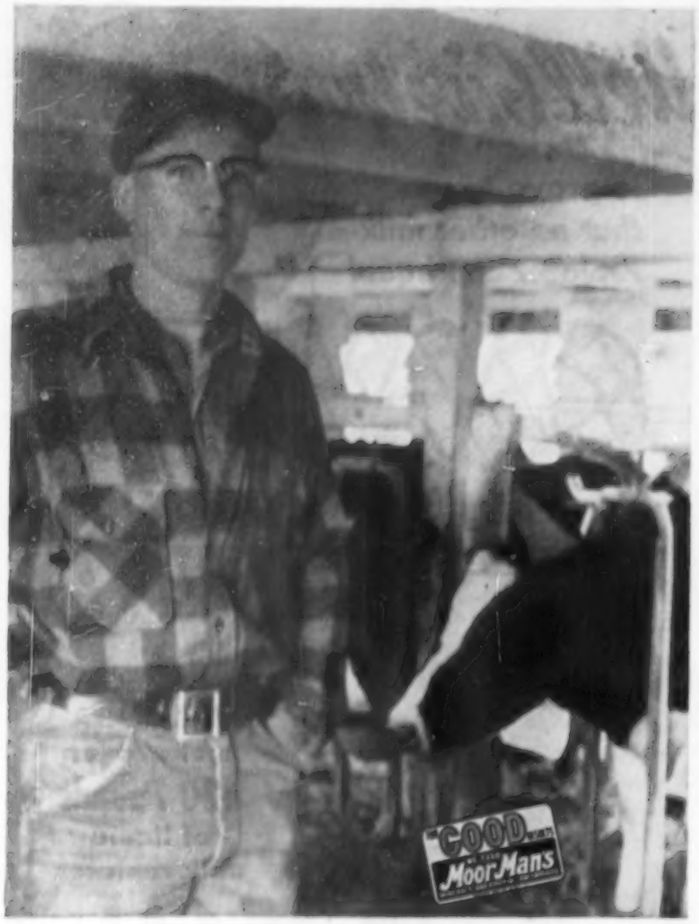

"My herd produced an average of 14,097 pounds of milk and 501.1 pounds of butterfat the first year on MoorMan's Mintrate," says George Clark. "It takes well bred cows to do that kind of a job. And it takes good feed. I'm making more profit with MoorMan's Mintrate than on any feed I've ever used."

"I cut feed cost 27¢ a hundred pounds of milk, with MoorMan's"

"*I make more money* from my dairy herd since I started feeding MoorMan's Mintrate," says George P. Clark, Hillsdale County, Michigan. My first year on MoorMan's gave me a net profit of $383.13 per cow, which was $98.07 more than I made the previous year.

"*I put my herd on MoorMan's* at the start of my last DHIA testing year. My records show milk production increased 12.3% and butterfat production increased 16.3%. My total feed cost per hundred pounds of milk, with MoorMan's, was 27¢ per hundred pounds cheaper than on my previous feed.

George Clark's experience is not unusual. Thousands of dairymen who have switched to MoorMan's Mintrate* for Dairy Cows have had similar results . . . milk and butterfat production on less feed—and feed costs down. Here's the reason—MoorMan's Mintrate, with its concentrated, power-packed blend of rich proteins, minerals and vitamins—fed at the rate of about a pound a day—helps cows wring *more* of the milk-producing nutrients out of home-grown grain and roughage.

For greater net profit from your herd—better talk to your MoorMan Man. He's a good man to know. Or, if he doesn't call soon, write Moorman Mfg. Co., Dept. P7-10, Quincy, Illinois.

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Since 1885—72 years of Friendly Service

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—a mineralized protein and vitamin concentrate that helps dairy cows get more milk-making nourishment from the feed they eat.

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Opinions, Brickbats, Bouquets

These columns are open to the readers of Hoard's Dairyman for the expression of their opinion on any subject, whether radical or conservative, destructive or constructive, wise or foolish, critical or commendatory. Hoard's Dairyman assumes no responsibility for opinions expressed.

"Customized milking"

If you know of someone who would like to start a new business; or, if you can use your imagination, I have a plan that is a little ahead of its time.

I call it "customized milking," and would suggest four crews of men to work six-hour shifts, seven days a week. Pay: $100 a week—less than 42 hours, $2 an hour straight.

These crews would go from farm to farm milking and caring for the dairy herds. As to equipment, I would suggest a portable milking parlor on wheels; or a pipeline that could be shoved into the farmer's dairy barn, if he had one. The milk would be removed from the farm at once in an ice bank cooler truck.

A farmer to produce high-quality milk would need only a sloping fence or an open shed for his cows; sleeping area not to be cleaned at all during winter months, only bedded.

No cow barn, no milk house, no milk cooler or bulk tank, no pipeline milker. Dairying would be a lot like feeding steers.

A dairy farmer could pay for this service and earn extra money working on a milking crew.

Milk inspectors would have nothing to inspect on the farms and would lose their jobs.

Illinois THORALD ANDERSON

Wants relief dairyman

I am very much interested in a relief dairyman. Our dairy operation is strictly a husband-wife operation with no one to take over for a vacation or any other reason. I think a man who is experienced in dairying, and is dependable, could make a good living at a business of taking over for dairymen who want vacations.

In our own case we would be glad to pay above regular hired man wages for a dependable person to take over for two or three weeks at a certain time each year. I believe there would be enough interested dairymen to keep the right man steadily employed.

Hope we hear more of this and that something can be worked out.

Illinois P. A. P.

Likes side-opening stalls

You had an article recently which was supposed to present the advantages and disadvantages of both the chute-type and side-opening parlor stalls. I started the article with real interest, having operated a side-opener for three years, but the article wasn't quite fair in giving the side-opener side of the story.

First, is the chute stall parlor cheaper to install? It has to have a pipeline milker and it should have automatic feed devices because milk and feed cannot be carried out of and into the milker's pit. Neither of these expensive installations are necessary to successful operation of side-openers.

But the big thing about the side-opening parlor is the pleasant working conditions it affords compared to the other type.

I have five large windows overlooking the country highway and beautiful lake shore. It is a pleasure during the milking operation to see who is passing by or to enjoy the lake shore scene. How can you do this from down between two rows of hot cows with the bottoms of the outside windows over your head?

As for the speed of milking, I average 23 cows per hour and have milked 26 cows alone at the rate of 31+ cows per hour. My parlor is three stalls, two units.

They say that the chute stalls give the cows more time to eat their grain and yet they leave less manure in the parlor. The way I see it, the less time a cow is in the parlor the less manure she is liable to leave.

O.K., so the chutes are best; but the side-openers have their good points, too.

New York C. KENNETH LANCE

In defense of multiflora rose

Mrs. Aaron's letter condemning the multiflora rose and listing it as the worst thing that had ever been planted on their farm in 25 years of farming caught my attention and I hasten to the defense of the multiflora; I hope not prematurely.

When I bought my old, run-down farm seven years ago the first thing I did was to plant the line fences with multiflora. The fences were in bad condition and would soon need rebuilding, but it seemed they would stand until the roses grew into a living fence. This was the case and the old fences were not rebuilt. At that time the farm was devoid of bird-life and all of the fruit was destroyed by insects.

Now the farm is a veritable sanctuary for the beautiful songsters such as the bluebirds, cardinals, redwings, thrushes, and so forth. The multiflora gives them the needed protection from their natural enemies, especially the hawks, cats, and foxes.

With the increase of the birds there was a concurrent decrease in the insect pests. This was particularly noticeable with regard to the pear trees. Whereas, seven years ago it was impossible to find a sound fruit, now it is just as difficult to find a worm-eaten pear which I attribute to the destruction of the insects by the birds.

No bird appears to eat the filthy Japanese beetle, and one can't blame them. These beeties show a partiality to the multiflora and, consequently, probably spare some of my other plants and shrubbery.

The multiflora not only makes a useful fence but a very decorative one. During the first days of June the aroma coming from the full bloom fills the air with a fragrance unsurpassed, if ever equalled, by the aristocrats among the flowers.

So many fence rows grow up with obnoxious and unsightly weeds that it is a definite relief to see a uniform rose hedge surrounding your acres. The multiflora eliminates the necessity of clipping the fence rows and thus saves many hours of work with

the tractor and with the scythe.

I agree that a few seedlings spring up over the pastures as a result of seeds dropped by the birds, but these are nothing compared to the junipers, cedars, and pines also carried by the birds and spread by the wind. We find it necessary to spend a few days in the early spring, when the ground is too wet to do anything else, eliminating the seedling pines and cedars. The multiflora is cut out at the same time.

While my experience with the multiflora rose is limited, at this point I feel its advantages far outweigh its disadvantages. Certainly, I would not classify it as a weed.

Virginia ROBERT SHOFFNER

"Farmerette"

As the farmer can't keep up with the government in wages, it is next to impossible to get help when he needs it. That is where the "farmerette" comes in. When my husband needs another truck driver, tractor operator, or milkmaid I can qualify and help out.

We milk 36 cows at present. I help with the milking every day and do most of it during the rush season. The barn is modern and I have no heavy work to do.

I not only milk the cows but I take care of them in general. If one is off her feed, I know it, and it is my job to watch fresh cows for signs of milk fever. I also call the inseminator and, on occasion, I have helped deliver a calf.

Doing all these things doesn't make me feel less feminine than my city sisters. In fact, I feel that my work is very satisfactory in living so close to nature and to God, and in knowing that I am fulfilling my job as a "farmer's wife."

Kansas MRS. DON PICKENS

"Bitter with the sweet"

I believe women have already invaded the dairy field but perhaps not extensively. But "we" are there.

There is no "supposing" what I, for one, would do if left alone with a herd. This last year has found me alone several times; up to three weeks in a stretch, none under two weeks. One time with a cow with a mashed teat and a powerfully wicked foot. Who won?

Last summer not only did I get left with a herd, but we were also making grass silage. I took over and worked in the pit along with chores, housework, gardening, canning, and what-have-you.

As for assisting with difficult deliveries of calves, I'm right there pitching. I've been lucky in not having to have any such deliveries when alone, but I assure you I know what has to be done and can. If I need a vet or a neighbor to help, so what?

As for the inseminator, I help on that score nearly as often as my husband. If we are selling cows and need blood tests, I'm there. Calves need dehorning, I'm there. And so on down the line. I learned to dehorn calves on the farm many years ago in southern Minnesota.

As for women doing this work, and being able to stand up under it, I should say definitely "no," they shouldn't do general farm work. Herdsman? Again, I suppose "no" — but I won't.

To sum it up, "we" all are a part of God's plan and life is beautiful. God has meant for us, as humans, to see it as such. If we must do these things or choose to, then it's up to us to do whatever comes, meeting the bitter with the sweet as we tread the pathway, even if it requires calling a vet or neighbor in time of need.

Michigan GOLDIE WILCOX

"We broke even; you said you'd save $600 roofing the barn yourself, and the hospital bill comes to $600."

Keep minerals in balance

The article, "Salt can poison hogs" in a recent issue of Hoard's Dairyman intrigued me. I think there is a fundamental principle involved in this that merits more consideration than has been given to it to date. That principle is that the several mineral components of the diet must be kept in suitable balance or the consuming animal, whether man or beast, will suffer serious consequences.

From time to time one reads accounts of difficulties experienced from grazing cattle on lush spring growth of wheat. The explanation is found in the excessively high content of potassium in this green material. The remedy lies in feeding more calcium and magnesium, in addition to the salt commonly supplied. For quick results in time of need, injections of calcium magnesium gluconate are used.

A lot of people are troubled by sodium "toxicity." Everything they eat has been salted, and they pour on a lot more at the table. Then there are the salted peanuts, pretzels, and potato chips that aid in the sale of soft drinks and beer.

It is easy to see that, with such eating habits, sodium is being consumed out of all proportion to the need for it, and to the point of serious imbalance with potassium, calcium, and magnesium. And the same applies to the chlorine, which is supplied far in excess of the needed sulfate and phosphate required to keep it in balance.

Some years ago I wrote Dr. Bohstedt of the University of Wisconsin and asked him whether he had ever known of a case of salt "poisoning" of hogs when they were grazing on clover or alfalfa. He was not certain about this. But I think they would be adequately protected by eating clover or alfalfa along with any salt-containing feed, since this would tend to supply the needed potassium, calcium, and magnesium to balance the sodium, and the needed phosphate and sulfate to balance the chloride.

A large percentage of the earth's population consumes sea-salt rather then the nearly pure sodium chloride of commerce. And sea-salt is only about 75 per cent common salt, the remainder consisting of a considerable variety of other salts, including potassium, calcium, magnesium, and sulfate. Unfortu-

(Continued on next page)

now, save as much as $300 on a heavy-duty barn cleaner!

...today's best barn cleaner buy for rugged strength, dependability and years of trouble-free service.

NEW CLAY Scotsman BARN CLEANER

HERE'S HOW CLAY CUTS COST—YET MAINTAINS RUGGED DEPENDABILITY

1 SIMPLE — Clay's design engineers eliminated trouble-causing "extras"—created a trouble-free, simple unit.

2 STRONGER—greatest gear reduction of any barn cleaner . . . multiplies pulling power

3 RUGGED — heavy-duty machine-cut gears and sturdy channel iron frame give massive size . . . long life at low cost.

4 SAFETY—new, safety-first friction release protects drive unit from overload. Eliminates costly clutches.

5 CLAYMORE 5X CHAIN—strongest, longest-wearing, low cost chain made. Lowers cost . . . offers greatest strength and value on the market.

Dollar for dollar—feature for feature—the new Clay "Scotsman" is today's biggest value in a heavy-duty, low-cost barn cleaner. You'll save as much as $300, installed—without sacrificing dependability, strength or long life. The Clay "Scotsman" Barn Cleaner power unit combines the leadership experience of Clay Barn Cleaner engineers with modern cost-cutting methods to produce a truly well made, rugged, dependable unit—at a market shattering price.

NEW, CLAYMORE 5X BARN CLEANER CHAIN

A rugged chain that offers up to 50% longer life . . . heat treated forgings with 50% greater bearing area to resist wear. A true heavy-duty chain . . . at low cost. Exclusive Clay machine-welding process assures a uniformly strong weld—lowers production cost. Get full money-saving details on the CLAYMORE 5X Chain, and the CLAY "Scotsman" Barn Cleaner. Write for FREE catalog today.

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Please rush information on the following:

☐ CLAY "Scotsman" BARN CLEANER ☐ CLAY MILKING PARLOR STALLS

☐ SILO UNLOADER ☐ MECHANICAL FEEDER

NAME _____

ADDRESS _____

CLAY EQUIPMENT CORPORATION

Feed Facts Worth Talking Over

You can depend on your feed man to supply you with information on economical cattle nutrition and also balanced rations. Be sure to ask him about the advantages of including Du Pont "Two-Sixty-Two" in your protein supplement.

Ask your feed man why Du Pont TWO-SIXTY-TWO® FEED COMPOUND in supplements means higher dairy profits for you

More milk at less cost: that's how you gain when feeding supplements containing Du Pont "Two-Sixty-Two"—the first and finest urea source of protein.

By including "Two-Sixty-Two" in supplements, your feed man can add more hominy, wheat or other quality feeds containing high levels of fat and energy. That's because he can substitute Du Pont "Two-Sixty-Two" for less concentrated sources of protein.

"Two-Sixty-Two" also lowers your feed costs by improving the milk-making value of your home-grown feedstuffs. It nourishes and stimulates rumen bacteria . . . helps them multiply and grow faster. The result: billions of them convert greater amounts of coarse, fibrous feeds into forms more efficiently turned into milk by your dairy cows.

Be sure to ask your feed man to include Du Pont "Two-Sixty-Two" in your custom- or ready-mixed rations.

DU PONT
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BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

TWO-SIXTY-TWO®
FEED COMPOUND

(Continued from preceding page)

nately, the phosphate content of seasalt is low. In my opinion, the time will come when seasalt, or some similar mixed salt manufactured by the chemical or food industry, will replace the purified sodium chloride we are now feeding to our livestock and consuming ourselves.

New Jersey — FIRMAN E. BEAR

"Not the answer"

I would like to call your attention to a recent item in Farm Journal entitled "Poultry Group Asks for Chick Allotments." I think you will agree, the broiler industry is one of the most highly efficient farm industries we have today, using the most modern techniques of mass production, the very latest in feed supplements to cut cost of production, and labor-saving devices known today.

This has been preached to them by our farm magazines, agricultural college economists, feed manufacturers, and some farm leaders. Yet, because of this very efficiency of mass production and ever-increasing volume to supplement their income, they still ask the government for help in controlling production, replete with allotments, and even a penalty of 10 cents per pound for overproducing the allotments.

If this doesn't work, what is the next step? Will it not be government control of price shortly to be followed by the poultry, egg, and turkey producers for they are already in the same trouble as the broiler producers; later followed by the dairymen and other groups?

Most dairymen, like the broiler producers, also have heeded the advice of our farm editors and economists and increased their volume, and have squeezed out many small producers believing that is the answer to their problems.

But now it should be clearly apparent to everyone (even our farm editors and economists) this is not the answer.

And if dairymen had reduced the supply of milk to demand, the supply-demand factor alone would have increased the price of milk 34 cents per 100 pounds without any help from the government or anyone else.

Indiana — CLARENCE WILDE

Trench silos are not for me either

Your article, "Trench silos are not for me," was every word the truth. The machinery companies tell the farmers to make trenches and put their feed in a ditch.

Do intelligent people put their valuable things in a ditch and expect to have good storage in such a hole? Here in the east we have tried such things and found the same results as Mr. Haskins. On our own farm, we lost 40 big loads of grass silage by putting it in a ditch.

We have been short of a lot of money like most farmers in this so called "prosperity" and have been forced to produce beyond our capacity to stay alive so that the rest of the good people could enjoy cheap living and play with good pay and weekend vacations on some distant island. After this experience we put our minds to work to see if the farmers could help themselves and still not mortgage their homes to buy some talked-about silos.

We figured out a simple plan to go by and to use building materials that we could buy nearby. We then dug the foundation and put up a 16 by 40 foot silo for less than $250. Now, we put silage in twice a year and suffer no loss, no digging, no dragging to the stable, and no stones and hardware in the feed. We have offered our plans to other farmers and many have helped themselves with our plans.

It is my belief that if farmers would make their simple machines and buildings and live believing that factories don't have to make everything for them, they would have something for themselves.

MICHAEL HOLOWKA
Pennsylvania

Hampered by male ego

What about women as herdsmen? A great many women love livestock and enjoy caring for them. They often, by nature, have patience and gentleness that bring top production. Their "eye" for spotting the first spot of measles in a child works as well in finding a cow that is off feed. Psychologists say women are better suited to jobs requiring daily repetition and are less apt to be bored. So women should be fine herdsmen.

But they won't, and it is not because of the work involved. I have done barn work for many years; the hard, dirty work as well as the pleasant jobs of milking, delivering calves, and gentling young stock—and loved every minute of it. But I know all too well the limitations placed on my job.

Unless a woman has enough money to buy her own outfit, she is destined all her working years to "help out." The men in her family will explain to outsiders that "mother" is "helping out" until we get a hired man, or until the children get old enough to take over, or until the corn is in, and so forth.

Of course, when they find a hired man or the children get old enough, they all head for the fields, and mother continues to help out. But she is never given the credit or the dignity due her. Her menfolk contend, privately of course, that any moron, any city vacationer who never saw a cow, or any male child beyond diaper age can take her place easily and she'd never be missed.

Many farm families would be better off financially if they would sit down and figure out who handles various jobs to the best advantage, and let each person do the managing where his talents lie. If this were done, many women who now do much of the work with a dairy herd could take pride in their job.

But male ego being what it is, it isn't likely to happen.

Wisconsin — MRS. J. T.

Just 60 years delay!

I am enclosing a dollar as per the enclosed blank. I have sort of lost track of time, and if it is too late for you to take the subscription, please refund the money.

Michigan — JOHN A. CHISHOLM

Mr. Chisholm's subscription application was submitted on a subscription blank dated 1896. It provided that his $1, accompanied by the blank, would entitle him to receive Hoard's Dairyman, which was then a weekly, until April 1, 1897.

HOARD'S DAIRYMAN
Founded in 1885

On mastitis control . . . we know more than we do

We still lack knowledge on mastitis. But are we using proven information effectively? Check your own practices with these recommendations.

by C. W. Burch, D.V.M.

AUTHOR USES STRIP CUP to demonstrate one of regular, key practices every dairyman should follow to help detect early signs of mastitis.

MASTITIS is costing dairymen more money than all other cattle diseases combined. This heavy dollar drain results from reduced milk flow, forced early culling, veterinary and medical expense.

Obviously, bovine mastitis deserves study and research from all angles. Why are some animals apparently more susceptible to mastitis than others? What renders the udder tissue vulnerable? What constitutes stress in relation to inflammation of the mammary gland? These and other questions must be answered by fundamental research.

Until we do know more, however, we must work with what we have. By and large, we "know" far more than we "do" right now.

Let's not throw up our hands in resignation and insist that we can do nothing simply because we have no quick, one-shot, "sure cure." Let's apply measures and practices which have been shown to be beneficial.

Equally important, we can discontinue those measures and practices which are known to contribute to a higher incidence of mastitis in dairy cattle.

With our present knowledge, prevention is the logical approach to control. By observing the following precautions and management practices, dairymen can avoid the majority of their mastitis problems. (Treatment will be discussed later in the article.)

Check your practices in boxes at right.

1. **Raise all your own replacements. Buy no adult cows.** ☐

2. **Follow a sensible milking procedure.** Wash teats and udder with warm sanitizing solution just prior to attaching the milking machine. ☐

Use separate, disposable paper towel for each cow. ☐

Use strip cup routinely on each quarter before each milking. ☐

Train cows to milk rapidly. Machine strip each cow; no hand stripping. ☐

Avoid udder damage by removing milker promptly but gently after cow is machine stripped. ☐

Between each cow rinse teat cups in cold water, then immerse them in sanitizing solution for 60 seconds, followed by a thorough rinse in a third pail of clean, cold water. ☐

As soon as machine is removed, disinfect lower one-half inch of each teat with sanitizing solution in plastic cup. Use fresh solution for each cow. ☐

Each man should operate only two units at a time. ☐

Check the vacuum pressure and stopcock pressure of milking machine at least once a month. Do this at several points along the line, with the minimum and maximum number of units operated. ☐

3. **Establish a definite milking order.** Milk the heifers first; the older, clean cows next; the suspected mastitis cows third; and infected cows last. ☐

4. **Take the milking machine completely apart after every milking. Clean and sanitize thoroughly.** Here is an outline you may follow. It has proven highly effective:

Rinse with cold or lukewarm water. ☐

Brush wash all equipment in warm water and alkaline dairy cleaner. ☐

Rinse equipment in HOT water. Utensils dry quickly. ☐

Sanitize all equipment, including milk cans, with a sanitizing solution just prior to each milking. ☐

Soak rubber parts in a 0.5 per cent lye solution between milkings. Make up a stock solution by adding one 13-ounce can of lye to one gallon of water. Add six ounces of this stock solution to one gallon of water. Use this as a "soak" solution. Discard after each soaking. ☐

Every dairyman should have two complete sets of rubber milking machine parts. While one is being used for a week, the other set should be soaking in a 10 per cent (stock) lye solution. Then the sets may be interchanged. This procedure is cheaper, safer, and more effective than using one set of rubbers and boiling occasionally. ☐

Use an acid cleaner (milkstone remover) once a week on all equipment, including milk cans. ☐

5. **Provide adequate stall space.** See table. Udder injuries are avoided, cow is comfortable, bedding can be kept under cow. ☐

6. **Always provide plenty of good, clean bedding.** ☐

7. **Remove manure daily.** ☐

8. **Keep the exercise yard free of stones, wire, and other debris.** ☐

9. **Keep door sills low.** ☐

10. **Provide plenty of light and ventilation in the dairy barn.** ☐

Compare your methods and practices with those outlined here. You can reduce mastitis in your dairy herd. Time, effort, and, of course, some money are required. It is our belief, however, that if the time, money, and effort now spent in promiscuous treatment were expended on correction of management faults and a sound evaluation of the problem, followed by restricted, supervised treatment, dairymen everywhere would save themselves many dollars every year.

Use qualified advice . . .

Your local qualified veterinarian can advise you on all aspects of mastitis control.

Since mastitis is a herd problem, a complete survey should be made to determine just what animals are infected, what quarters are infected, and what organisms are involved. The veterinarian can then more intelligently treat or supervise the treatment of the infected animals.

The herd owner and the veterinarian may determine that further treatment of certain cows is useless, and the animal should be shipped to the butcher. Some types of mastitis do not respond to treatment and even may be aggravated by treatment.

Warning . . .

Whenever an animal is treated for mastitis, the milk should not be offered for sale for at least 72 hours. It may be fed to hogs or chickens. Antibiotics not only inhibit the action of the cheesemakers' starter cultures, but they, as well as other mastitis preparations, constitute adulterants in the milk, which is a violation of the Pure Food and Drug law. Violators are subject to fines and sometimes other penalties.

Desirable Sizes of Cow Stalls Using Electric Cow Trainers

Weight of cow	Stanchion stalls		Comfort stalls		Tie stalls	
	Width	Length	Width	Length	Width	Length
Pounds						
800	3'6"	4'8"	3'9"	4'11"	4'0"	5'2"
1,000	3'9"	5'0"	4'0"	5'3"	4'2"	5'6"
1,200	4'0"	5'4"	4'3"	5'7"	4'6"	5'10"
1,400	4'3"	5'8"	4'6"	5'11"	4'9"	6'2"
1,600 and over	4'6"	6'0"	4'9"	6'3"	5'0"	6'6"

THE END

The author is extension veterinarian on the staff of the University of Wisconsin.

Farm Flashes . . . .

Seasonal reminders and research notes for the dairyman

A POSSIBLE FAT LOSS

Do you completely fill your milk cans? If you do, you may be getting a lower test than if you left some room at the top.

When cans are filled as full as you can get them with the evening milking, the cream

rises during the night and will adhere to the cover and inside shoulders of the can. As this milk is well cooled, the cream will be thicker than usual.

When hauled to the milk plant, there will be very little agitation to mix the milk. At the receiving room, the cover is removed with a layer of cream on it that is washed off in the can washer and never gets in the weight tank. Likewise, some cream may be left on the inside shoulders of the can.

This has been known to lower tests as much as three to four tenths of a per cent. It may account for milk tests sometimes increasing when shifting to bulk tank.

To reduce this fat loss, don't fill cans too full. This will reduce chances of cream sticking to can covers and also will allow the milk a chance to mix more as the cans are shaken up on the way to the milk plant.

LATEST RECOMMENDATIONS FOR MILK HOUSES

A committee representing the northeastern states has come up with a new list of recommendations for construction of milk houses for bulk tanks. Here are report highlights:

When considering the size of a milk house, allow a minimum clearance around the bulk tank of at least three feet at the outlet end and the side nearest the wash vat and the pouring side of the tank. Allow at least two feet clearance at the remaining side or sides.

Where tank size is up to 150 gallons, the milk house interior should measure at least 12 by 12 feet; to 300 gallons, 12 by 14 feet; and to 475 gallons, 12 by 16 feet. For larger tanks, the room should be 14 by 18 feet.

To accommodate tank wastes, a drain should be provided about 18 inches from the bulk tank outlet. An additional floor drain of the trapped type is desirable in the sink area.

A smooth, impervious finish must be used on the inside walls to a minimum height of 18 inches above the floor and is recommended for the remaining wall surfaces and ceiling as well.

Walls and ceilings should be insulated to help keep the milk house above freezing. A vapor barrier is necessary between the interior of the milk house and the insulating material to maintain efficiency.

The ceiling should be at least seven feet high; all doors should be self-closing; screen doors should open outward; and there should be no direct openings from the milk house into areas used for domestic purposes.

The hose opening for tank delivery should be not less than six inches above the milk house floor or the external loading area, whichever is higher, and be fitted with a self-closing door.

TIME TO WINTERIZE TRACTOR

If you have not already done so, now is the time to get your tractor ready for cold weather.

Before putting anti-freeze in the cooling system, the radiator should be drained and flushed, using one of the commercial cleaners now available. This cleans out the accumulated rust and sludge in the cooling system.

All hose connections should be inspected and hose clamps tightened. Old or deteriorated hoses should be replaced with new ones. Check to see that thermostats are working properly. If the fan belt is worn and cracked, it should be replaced.

The radiator core needs to be cleaned. Remove all accumulated dust, leaves, dirt, and dead insects from the air passages.

After these things have been done, the cooling system should be filled with an anti-freeze solution.

Air-cooled engines used on garden tractors, power lawn mowers, and the like should be prepared for winter storage, also. After warming up the engine, the crankcase oil should be drained and replaced. The motor should then be restarted and run for a few minutes to coat the inside of the engine and the working parts with new, clean oil.

Remove the spark plug and turn the engine over three or four times by hand, but do not start the engine. This coats the top part of the cylinder and piston and valves with oil and prevents rusting while the equipment is in storage. Also, drain the fuel tank and carburetor.

IMMATURE SOYBEANS— LIVESTOCK FEED

Immature, green beans have trouble finding a market because the oil is green in color and cannot be used for human consumption. This does not mean immature or damaged beans should be left in the field.

You can feed raw, immature, green soybeans to livestock and dairy cattle as a protein supplement. They should be ground before being fed to dairy or beef cattle and must be ground or cooked when fed to hogs. Beans need not be ground for sheep.

Because of their high oil content, soybeans are difficult to grind. Some of this difficulty can be avoided by mixing the beans with an equal part of grain, such as barley or oats. It is also difficult to store ground beans, so only a small supply should be ground.

Figuring they contain from 30 to 33 per cent protein, the following daily allowances for green, immature beans are suggested:

Milking dairy cattle—up to 5 pounds.

Dairy heifers or dry cows—up to 2 or 2½ pounds.

Beef cattle—up to 2 pounds.

Sheep—up to ½ pound.

Hogs—up to 6 per cent of total ration.

If green, immature soybeans are fed, they should be started slowly and abrupt feeding changes should be avoided.

INSULIN DETECTS DWARF CARRIERS

A University of Illinois physiologist reports that insulin has joined the fight against dwarfism. It detects normal-appearing cattle that are carriers of dwarf genes.

In the test, insulin is injected into an animal's bloodstream. The blood sugar level then rises to a certain point and drops down. The blood sugar level does not decrease so sharply in dwarf carriers as it does in normal animals. While this method is not foolproof, it is one of the most promising developed for detecting dwarf carriers.

Another promising test is the x-ray technique. An x-ray of a calf's backbone, taken when the animal is a few days old, may reveal peculiarities indicating it is a carrier.

While the cause of dwarfism has been debated often, genetic factors are known to control the most common form of dwarfism. A dwarf calf results when a dwarf-producing recessive gene from the sire unites with another dwarf-producing gene from the dam. Evidence clearly shows that an animal which has two of these dwarf-producing genes will be a dwarf despite any nutritional conditions that may prevail.

CORN STALKS— GOOD COVER

It is important to keep stalks in close contact with the soil surface, either flat on it or worked into the top inch or two of soil. They will absorb beating rains and reduce soil splash. A Kentucky soil conservationist suggests disking or laying them on the contour at right angles to the field slope.

For erosion control, the more stalks the better. Leaching of nutrients from the fields

seems to be less with disked down stalks. When left standing, the nutrients in the stalks seem to leave with rain run-off. If possible, sow a cover crop with the disked down stalks.

LIME PREVENTS LITTER CAKING

Now that laying hens have been housed for awhile, it is time to add new litter, if you use the deep litter system. As the birds break up and pulverize the first layer, two to three inches more should be added.

It would be well to add 10 pounds of hydrated lime per 100 square feet. This helps to prevent caking and packing of the litter, according to a Rutgers extension poultryman. This lime should be well worked into litter.

When the second layer of new litter has been broken up and pulverized, a third layer should be added so that a depth of six to eight inches has been developed before the cold, damp of winter arrives.

How good is your roughage?

Forage quality is based on amount of crude fiber and lignin it contains. Here is how to judge yours, and suggestions for improving it.

by C. A. Lassiter

COWS PRODUCE only 60 per cent as much milk on poor-quality forages as when they are fed high-quality roughages. Feeding high-quality roughages means more profit.

FROM a cow's viewpoint, she needs forages that are highly nutritious, palatable, and possess large quantities of the so-called "milk stimulating" factor. Scientifically we are looking for forages that are highly digestible, high in protein, high in productive energy, and low in crude fiber or lignin that decrease the milk producing power of a forage.

The amount of crude fiber and lignin largely determines the nutritional value of forage. Both are part of the carbohydrate fraction of plants, which represents about 60 per cent of most plants. When we consider that dairy cows receive from 70 to 80 per cent of their total feed intake from forages, we see why quality, particularly the quality of the carbohydrate fraction, is so important.

Symptoms of poor quality . . .

Generally low-quality roughages are low in protein and the protein available is low in digestibility. Low-quality forages often are poor sources of calcium and carotene. As mentioned previously, by far the most serious deficiency of poor-quality roughages is crude fiber. When fiber content is high, the lignin content increases some, but even more serious, the lignin tends to tie up and reduce the utilization of other constituents in low-quality forages. Also, low-quality roughages are nearly always low in palatability. Cows will not consume as much of these forages as they will high-quality forages.

Effects on milk production . . .

Recently the Cornell Station completed a lengthy study concerning the effect of forage quality, as well as harvesting methods, on the nutritive value and on the milk producing ability of forages (Hoard's Dairyman, June 10, 1955). In one study, cows fed early-cut hay-crop silage produced 6.6 pounds more milk per day than cows fed silage cut in the late stage of maturity. In the same study, early-cut hay produced 2.4 pounds more milk per day than late-maturing hay. On a lactation basis, this would mean a $20 to $80 decrease in the yearly income from milk for each cow in the herd.

This becomes even more important when we consider that Michigan's 1955 D.H.I.A. records show that cows producing 8,000 to 8,500 pounds of milk returned only $148 over feed cost. Other studies have shown that cows produce only 60 per cent as much milk on poor-quality forages as when fed good-quality roughages.

Recently the Kentucky station conducted a lactation study with some nitrogenous compounds using a medium-quality timothy hay as the only roughage. These cows were supplemented with grain in adequate quantities and all of the known nutrients necessary for high milk production. Surprisingly, none of the cows seemed to produce as they should and as they had in previous lactations. The cows produced only 6,706 pounds during the lactation on the timothy hay as compared to 10,488 pounds in previous lactations when fed better-quality forages. This re-emphasizes the importance of high-quality forages in the milking cows' ration.

Research data have shown us that many things may cause forages to be low in feeding value, but three things stand above all others. These factors are: (1) type of forage, grass or legume and the difference within each type of grass or legume; (2) stage of maturity of the forage when harvested; harvested either in the form of hay, silage, or pasture; (3) harvesting and curing methods and the damage occurring in such operations.

Type of forage . . .

Most grasses are lower in feeding value than legumes. For example, the protein content of alfalfa hay is about 14 to 15 per cent and the energy content about 43 to 50 per cent, depending on how it is measured. Timothy hay contains only about 6 to 8 per cent protein and 38 to 48 per cent energy. If losses occur in harvesting and storage, this loss is much more serious with grass forages since they are initially lower in quality.

The stage of maturity at harvesting time or when pastured are important factors affecting forage quality. As forages increase in maturity, their nutritive value decreases. Again this is more important with grasses than legumes.

Forages usually are most nutritious when not more than 6 inches high. Obviously, the yield of forages harvested at this stage is quite low, which means that some compromise must be made. As a result it has been shown that to obtain the most nutrients per acre, harvest in the early bloom stage. When forages are used for pasture, the grazing height should be kept under 10 to 12 inches with most forages.

Damage during harvesting . . .

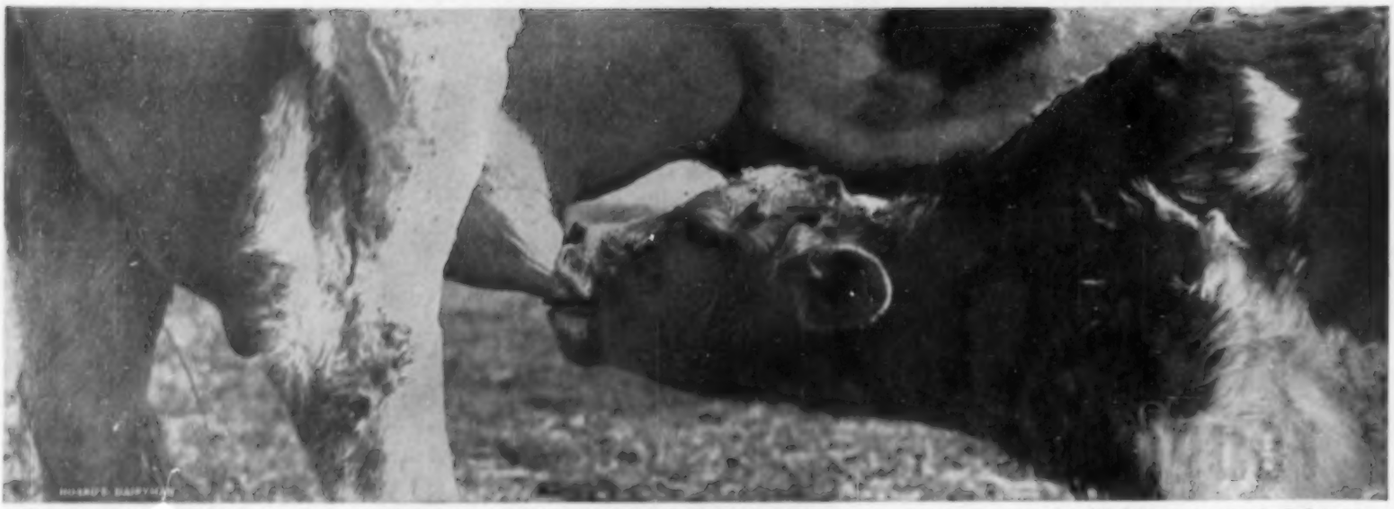
Recently the U.S.D.A. published the results of an extensive study on the nutritive value of alfalfa harvested in different manners; namely, field-cured and barn-dried hay with and without rain, dehydrated hay and hay-crop silage. No great difference existed between the various methods except with dehydrated hay, which was about 11 per cent better than field-cured hay. The important finding was that regardless of the method of harvesting used, rain-damaged hay produced from 25 to 42 per cent less milk than that not rain damaged.

What will grain do?

Can I make up the deficiencies of low-quality roughage in the grain-feeding program? The answer to this question is probably, yes, with some reservations. For example, we know that low-quality roughages are low in protein, minerals, and carotene. All of these can be increased in the grain mixture to produce satisfactory results. There is little danger of a calcium or carotene deficiency.

When we consider protein, we have a different story. When low-quality forages are fed, more protein must be fed in the grain mixture. This is why it is generally recommended that the protein percentage of grain mixtures vary with the quality of the forages fed. The recom- *(Turn to page 1027)*

The author is a member of the dairy department at Michigan State University.



WILL THIS CALF DIE? Its chances of living to maturity are one in four. The fact that it gets colostrum soon after birth improves survival chances.

Calf losses cut profits

An Iowa survey showed that 25 per cent of all born calves die, with scours, pneumonia, and navel infections as the major causes.

by Roy Reiman

MORTALITY rates show that calf losses on dairy farms are more serious than most farmers think. For example, a few years ago Iowa dairy farmers lost nearly 200,000 calves annually. That may seem hard to believe, but it's true, according to Robert Fincham, Iowa dairy husbandman.

"The last time we surveyed the situation here in Iowa we found that dairy farmers were losing 25 per cent of their calves before reaching maturity," Fincham says. "That meant a dairyman who kept 20 to 25 cows lost 4 or 5 calves each year. And in some states the fatality percentage was even higher. We know the percentage has improved recently, but there are still a lot of calves dying unnecessarily due to improper care."

Most of the calf losses occur early in life, Fincham reports, and dwindle off percentagewise as the calves get older. In Iowa studies, 58 per cent of the losses came during the first 30 days. Another 26 per cent of the losses occurred in the second and third months. That makes a total of 84 per cent in the first three months.

Why do they die? The causes vary on different farms, but scours, pneumonia, and navel infections account for two-thirds of all losses in most cases. Scours and pneumonia were the "big two" in Iowa studies, causing more than 55 per cent of calf losses. These figures were pretty much borne out in tests by three other colleges.

Fincham is convinced that the key to fighting calf losses is simply better management. And good management has to start before the calf is born. Briefly, that means to maintain a healthy herd, feed the cow a good ration, provide a 6- to 8-week dry period for each cow (two-thirds of calf growth occurs during last two months), and provide a clean and sanitary calving stall.

As pointed out, the most critical period is from birth to 3 months of age. It's best to be with the cow at calving time, so you can give assistance if necessary. As soon as the calf is born, disinfect its navel with iodine.

"This is one of the simplest and easiest practices in proper calf care, yet it's the one most often neglected," Fincham says. "Navel infection is the third largest cause of calf losses, and with a 50-cent bottle of iodine it can be practically eliminated."

It's vitally important that the calf gets its mother's milk the first 3 days. Colostrum is rich in vitamin A and antibodies, which are helpful in providing resistance to infections of the digestive tract. If you allow the calf to get such an infection, it weakens the calf's system, and it becomes susceptible to pneumonia and other secondary invaders.

Pneumonia itself can be reduced by providing a clean, dry, well-lighted stall. Be sure to avoid drafts, over-crowding, and extreme temperature changes.

Whether or not the calf gets scours depends pretty much on your early feeding practices. Over-feeding is one of the mistakes made most often by dairy farmers, though they mean well in making sure the calf "gets enough." The rule-of-thumb measure recommended by Fincham is to feed daily 1 pound of milk or milk equivalent for every 10 pounds of birth weight. That means if the calf weighs about 80 pounds, you'll want to feed 1 gallon of milk a day.

The choice between feeding whole milk or a liquid milk replacement depends on the individual situation, according to Fincham. "Unless you're getting more than $4 per 100 pounds of whole milk, it usually will pay to feed your own milk instead of buying a replacer," Fincham says. "If you decide to use a replacer and you have quite a few calves, you may want to mix your own replacer with suggested formulas. If you have only a few calves, it might be best to buy a replacer."

Concentrates and hay should be provided at 2 weeks of age, and continued up to almost 3 months. At that time you might want to change your tactics a little. From 3 months of age to freshening, Fincham advises feeding heifers for rapid growth. Grain with high-quality hay or pasture is essential up to 1 year of age.

During this time, inexpensive housing is adequate. Diseases and parasites have to be kept in check. One of the big things to remember along that line is to vaccinate for Bang's diseases between 4 and 8 months.

And, as a last suggestion, Fincham points out that only well-grown heifers should be bred to freshen at 2 years of age.

Calf feeding recommendations
(By Iowa State College)
Pounds daily per 100 pounds birth weight.

Weeks	Whole milk (3.5% fat)	Liquid milk replacement (15% solids)
	(following an initial 3 days on colostrum)	
1	8	8
2	8	9
3	8	10
4	8	9
5	7	7
6	6	6
7	4	4

Suggested formulas for milk replacements

Ingredient	Milk replacements 1	2	3
	%	%	%
Dried skim milk	48.00	54.00	98.65
Dried whey product	12.50	16.50	
Distillers dried solubles	15.00	15.00	
Oat flour	5.15	5.15	
Blood flour	10.00		
Dextrose	7.00	7.00	
Vit. A supplement*	.70	.70	.70
Irradiated yeast**	.10	.10	.10
Minerals			
Dicalcium phosphate	1.00	1.00	
Trace	.15	.15	.15
Aurofac D***	.40	.40	.40

* 5000 IU/gram, 15,900 IU/lb. replacement
** 4 million IU/lb., 4000 IU/lb. replacement
*** 5 grams aureomycin/lb. supplement, 20 mg./lb. replacement

If the above systems are to be successful, the calf must begin eating a good calf starter at an early age. The calf starter should be palatable, relatively low in fiber (not over 6 to 8 per cent), and high in protein (18 to 20 per cent crude protein). Several calf starters are shown in the following table:

Recommended calf starters

Ingredient	Starters 1	2	3	4
	%	%	%	%
Corn (coarse ground)	40.0	28.0	16.5	20.0
Oats (crushed)	30.0	30.0	20.0	22.0
Soybean meal	28.0	30.0	17.0	20.0
Wheat bran	—	—	15.0	10.0
Linseed meal	—	—	10.0	—
Dried whey product	—	—	10.0	—
Molasses (blackstrap)	—	10.0	5.0	10.0
Dehydrated alfalfa meal	—	—	5.0	—
Steamed bone meal or dicalcium phosphate	1.0	1.0	1.0	2.0
Salt (NaCl, iodized)	1.0	1.0	0.5	1.0
Distillers dried solubles	—	—	—	15.0

Good growth has been obtained with all of the above starters when fed with limited milk or milk replacement and good legume hay.

THE END

Labor costs 42 per cent lower

. . in loose housing-milking parlor system over stanchions in a recent comparison made of two large Virginia herds.

by R. Lee Chambliss, Jr.

HOW do the labor requirements for milking, feeding, and caring for dairy cows compare between the stanchion barn and a milking parlor—loose housing system? How much difference is there in capital requirements of these two systems?

To help answer these questions, the Virginia agricultural experiment station made a comparative case study of two large dairy farms, one using a stanchion barn and the other using a milking parlor with loose housing. The studies were made during the winter when the labor requirements for the herd were heaviest.

Observations were made of all the daily chore work involved in milking, feeding, barn cleaning, and caring for the cows. The times required for each job under each system were observed and recorded. Capital investment requirements were also obtained or estimated for each system.

On the farms observed in this study, labor was used much more efficiently in the milking parlor—loose housing system than in the coventional stanchion barn. **Two men cared for more cows in the first system than three men in the stanchion barn.** As a result, labor requirements per cow were much lower with the milking parlor—loose housing system. In fact, total labor savings on all jobs amounted to 7.4 man-minutes per cow per day, a reduction of 42 per cent in labor requirements per cow.

The greatest amount of time saved was in the cleaning job where 2.9 minutes per cow per day were saved.

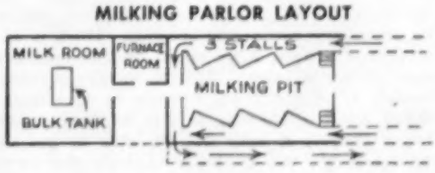
The first case studied was the conventional two-story stanchion barn with hay and straw storage on the second floor above the cows. Bales of hay and straw were thrown down through openings into the feed alleys, and then were distributed. All cows, both milking and dry, were kept and fed in the stanchions.

Silage was fed from two upright silos located on each side of the barn adjacent to the central shed. Silage was thrown down by hand onto the *(Turn to page 1032)*

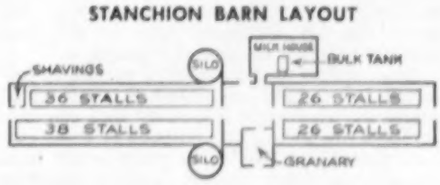
The author is associate agricultural economist, Virginia Agricultural Experiment Station, Blacksburg.

MILKING TIME on the Harry Langhorne farm finds cows entering the two alleys leading to the milking parlor. Note single outlet alley to left of the cows where they return to the paved lot and pasture area after being milked. Langhorne has 160 cows comprising his herd.

MILKING PARLOR LAYOUT



STANCHION BARN LAYOUT

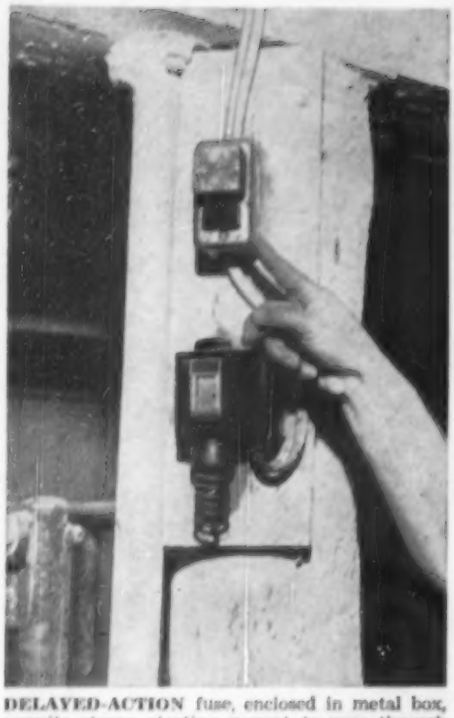


How two systems compared . . .

	Milking parlor**	Stanchion barn*
Total cows in herd cared for per man hour	7.6 cows	4.0 cows
Milking cows cared for per man hour	6.0 cows	3.4 cows
Man time per cow for all cows in herd	7.9 min.	15.0 min.
Man time per cow milked per day	10.1 min	17.5 min.
Man time per cow milked per milking	5.1 min.	8.8 min.
Man time in milking only per cow milked	2.7 min.	3.6 min.
Milking machine time per cow per milking	6.1 min.	7.8 min.

** 125 cows milked; 160 cows in herd.

* 107 cows milked; 126 cows in herd.



DELAYED-ACTION fuse, enclosed in metal box, permits strong starting current to pass through but melts instantly in case of a short circuit.

ELECTRIC MOTOR on barn fan is protected by delayed-action fuse. If current becomes great enough to damage the motor, fuse cuts circuit.

Keep electric motors from "burning out"

By making a small investment for electric motor protection, you may save the cost of a new motor or, even more important, prevent a serious fire.

by D. W. Bates

AN OLD adage says, "A stitch in time saves nine." A parallel to this might be "A fuse of the right kind in time can save an electric motor."

Electric motors are willing and tireless helpers about the farmstead and in buildings. However, each year many motors come to an untimely end, resulting in unnecessary expense and inconvenience. One of the chief reasons for this is improper fusing.

Each circuit in the electrical system is protected by a fuse or circuit breaker which limits the amount of electricity that can flow through the wires. The purpose of these current-limiting devices, as they are called, is to protect the electric wiring, not the pieces of electrical equipment which may be connected to the circuit.

For example, an appliance circuit made up of number 12 wire is fused at 20 amperes. As long as less than 20 amperes flows through the circuit, the fuse will hold. The instant more than 20 amperes flows through the circuit, the fuse will blow.

Use correct fuse . . .

Three to five times more current is required to start an electric motor than is necessary to run it after it attains full speed. If an ordinary fuse is used it must be of sufficient capacity to handle the large but momentary starting current and it offers no motor protection once it gets up to speed.

For example, it may take 4.5 amperes to run a ½-horsepower motor. To start the motor, however, 12 or more amperes might be necessary for a few seconds. Thus, a 15-ampere standard fuse would be the smallest that could be used. If the motor is overloaded as a result of damage to the equipment it is powering, faulty lubrication, or other causes, it may not be able to get up to speed and will continue to draw the large starting current.

The standard fuse doesn't care about the motor; it protects only the wiring. Since the motor is not made to take the large starting current for any prolonged period, it will become hot enough to damage the insulation on the wires in it and subsequently burn out.

If the motor gets up to full speed, there is still danger of its burning out if it becomes sufficiently overloaded. Suppose, in the example cited, the motor should draw 7 amperes after it gets up to speed. In time it could burn out as completely as if it never got off the starting windings. A small over-current for a long period can cause as much damage as a large over-current for a short period.

A motor can easily be protected from burning out by a delayed-action fuse or a circuit breaker. These devices must be placed in the individual circuit to the motor so that they serve no other equipment.

The delayed-action fuse contains a fuse link large enough to allow the large current required for starting the motor to pass through it, but will melt almost instantly in case of a short circuit in the motor. One end of the fuse link is held in a small cup of solder surrounded by a heating coil.

Should the flow of current become great enough to damage the motor, the solder will melt and a spring inside the fuse body will pull the fuse link from the solder cup, breaking the circuit and protecting the motor.

A delayed-action fuse can be distinguished from a standard screw-base fuse by the spring which is visible through the transparent cover. A blown fuse must always be replaced with a new one.

Protects motor . . .

A circuit breaker differs from a delayed-action fuse. It contains a bimetallic strip which is in close contact with a heating coil. When the bimetallic strip is heated it bends unevenly. A current which might damage the motor will cause the bimetallic strip to bend far enough to cause the switch mechanism to be opened, disconnecting the motor from the line and protecting it from damage. After the bimetallic strip has cooled off and returned to its original shape, the switch can be re-set.

Some electric motors have thermally-operated switches built into them. A red button with the words "push to re-set" printed on it or near it usually identifies the mechanism. In addition to protecting the motor from over-heating due to excess current, such a device will also protect the motor from over-heating due to improper ventilation of the windings or excessively high surrounding temperatures.

Must be right capacity . . .

It should be remembered that if the overload device is to protect the motor it must be of the proper capacity. Each electric motor has a name plate on which is printed the full load running current requirement in amperes.

If the motor can be operated on both 120 and 240 volts, the amperage required at both voltages will be shown. It takes only ½ as much current to operate a motor on 240 volts as it does on 120 volts, so the larger amperage shown will always be for 120 volts. When the motor is operated on 240 volts, two delayed-action fuses are necessary (because there are two hot wires) but the capacity of each is only ½ that of a single fuse suitable for protecting the same motor on a 120-volt circuit.

As a general rule protective devices should have a capacity of 125 per cent of the rated amperage of the motor they are to protect. For many fractional horsepower motors a delayed-action fuse one size larger than the motor name plate amperage will be satisfactory.

Three types available . . .

Delayed-action fuses are available in three types. One type has a threaded base that will fit any regular plug-fuse socket. A second type, referred to as a non-tamperable fuse, looks the same from the top but has a smaller base. To use such a fuse a special adapter must be put into the regular plug-fuse socket. Once the adapter is put in, it cannot be removed without ruining the receptacle.

A given adapter will accommodate only fuses within a certain amperage range, eliminating the possibility of installing an oversize fuse. Make sure the adapter installed comes within the amperage range of the motor to be protected. *(Turn to page 1036)*

The author is an extension agricultural engineer, University of Minnesota.

STARTING NEXT ISSUE

Another EXCLUSIVE FEATURE

THE 7TH ANNUAL

HOARD'S DAIRYMAN ROUND TABLE

Here are some of the folks who will answer your questions:

DAVID CUMMINGS, Guilford College, N. C., one of eight dairy farmers who describes "MY FAVORITE GRAIN MIXTURE FOR THE MILKING HERD." In next issue, NOVEMBER 10.

DR. HAROLD SCHMIDT, Modesto, Calif., and five other veterinarians will give their views on the subject of, "MASTITIS CAN BE CONTROLLED." Don't miss it, NOVEMBER 25.

JONAS GRUVER, Thomasville, Pa., has had outstanding success with his Holsteins. With seven others, he answers questions on, "HOW WE GROW HEIFERS," in DECEMBER 10 issue.

MRS. HAROLD PHILLIPS, Janesville, Minn., is one of six women who discusses "THE WIFE'S ROLE IN THE DAIRY BUSINESS." Be sure to see the woman's point of view, DECEMBER 25.

ROBERT SAMSON, Vernon Center, N. Y., one of several who tackles the question, "IF I WERE SECRETARY OF AGRICULTURE." This stimulating discussion in the issue of JANUARY 10.

GERALD CASLER, Fort Plain, N. Y., produces more than 400,000 pounds of milk per man. He and five others tell us "MILK PER MAN IS OUR PROFIT YARDSTICK," in JANUARY 25.

ED ZIMMERMAN, Norristown, Pa., a pioneer in drying hay, describes his system with five others in the issue of FEBRUARY 10. You will want to read "OUR DRYING SYSTEMS."

HAROLD OWEN, Homerville, Ohio, along with five others who have had experience with this system, tells why he prefers "ZERO GRAZING" in the last of the series in FEBRUARY 25 issue.

Our Round Table members are carefully chosen from among the nation's top dairymen. Their ideas and experiences can HELP YOU. The popularity of this regular series has stamped it as the most valuable source of information published for American dairy farmers.

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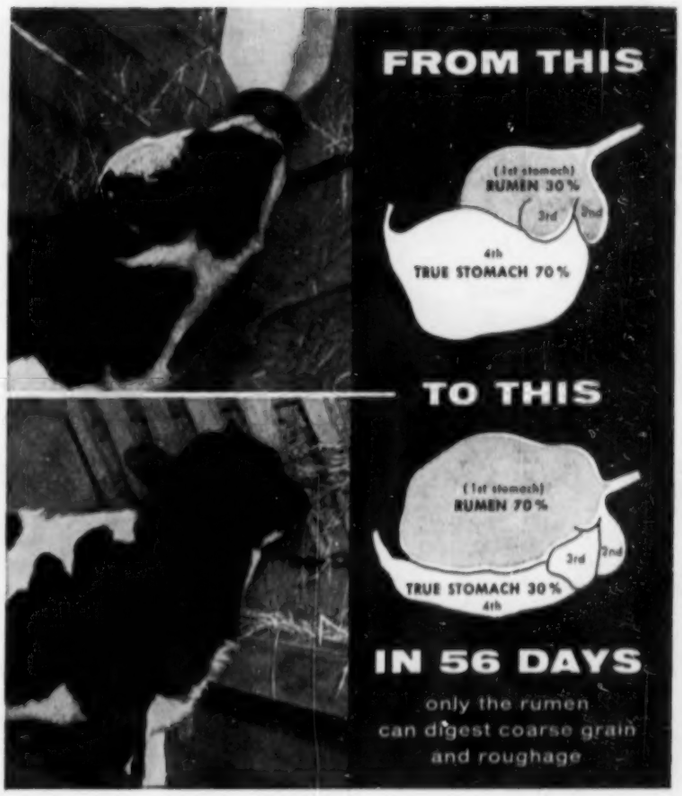

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Total Gain	46	46	56	43	51
Suckle	23	22.9	20.0	22.3	20.0
Calf Manna	41.3	36.7	42.3	39.9	42.9
Grain	59.2	61.8	61.7	60.4	59.6
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8 Week Weight	133	121	130	120	125

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THREE DAYS AFTER CALVING this Illinois heifer showed typical swelling, including edema forward on the body. Heavy producers are more susceptible to this trouble. Some success has resulted from injection of certain purified blood proteins into the blood stream.

When the udder is swollen . . .

. . . don't blame feed alone. Research shows that rapid transfer of blood proteins causes swelling.

by G. W. Salisbury

DO YOU have trouble in your herd with swollen udders at the time of calving? Do your first-calf heifers suffer more than older cows? If you do, you are like a lot of other dairymen with good cattle.

So far no one has been able to do much about it, to determine the cause, or to suggest an answer. Recent research in the department of dairy science at the University of Illinois suggests that this problem soon may give way to the critical examination of science.

Caked, congested, or edematous udders occur frequently in dairy cattle just before and after calving. It is especially frequent in first-calf heifers, and usually hits the better cattle.

Sometimes the congestion involves not only the udder but the swelling may extend forward to the brisket, especially in heifers.

While it has been difficult to determine exactly the effect of the swelling on later production of the cattle which suffer from it, the general opinion is that later production is decreased. Whether or not this effect is due to damage of milk-secreting tissue or more directly to a reduction in feed intake (which occurs in normal herd management) is not known.

In the typical condition, the edematous udder is tender and often is swollen out of shape. The teats may be full and turgid (swollen), and so tender to the touch that the animal resists milking. The udder has a hard, doughy consistency, and finger mark indentations fill up slowly. The condition may last only a few days, or it may persist for two or three weeks.

Usually treatment consisted of warm packs, heating salves, massages, and gentle milking; and withholding of grain feeding until the swelling was reduced.

Lymph in tissues . . .

The cause of the difficulty was not understood, although it was recognized there was an accumulation of lymph in the tissues concerned. Heavy grain feeding has been blamed as a cause. In some areas of the Corn Belt the heavy feeding of corn to cows before calving has been considered to be the primary cause.

Scientists at the Illinois Agricultural Experiment Station have studied this problem for several years. Under the direction of K. E. Gardner, they first set up methods of measuring the degree of swelling.

In one feeding trial a group of heifers and cows were fed grain at 4 to 6 pounds per day before calving. Another group was fed only hay before calving. The grain-fed group had, roughly, twice as much swelling as those fed only hay.

Feed had no effect . . .

A larger and better controlled experiment involved 18 heifers and 18 cows. For 42 days before calving one-half of these were fed daily as much as 9 pounds of grain to the heifers and 12 pounds of grain to the cows. The other half received no grain. Both groups received all the alfalfa hay they wanted.

No difference in edema resulted from the different levels of feeding, but the heifers suffered more than the cows.

Later, J. H. Byers fed both heifers and cows a ration composed entirely of corn grain and corn silage. Another group received this ration plus urea. In none of the calvings was there any more caked udders than for similar cattle fed a normal ration of alfalfa hay, corn silage, and concentrates to meet the nutrient needs for production.

These observations made it pretty clear that, except for the more frequent occurrence in heifers, the experimental feeding approach was not going to get at the problem very fast. About this same time B. L. Larson, a biochemist in the department, began his studies of milk proteins.

He found, by the use of radioactive carbon tracers, that the mammary gland cells manufacture four of the main proteins of milk, and another group of proteins fil-

The author is head of the department of dairy science, University of Illinois.

ters directly from the blood stream through the mammary gland into the milk.

These latter proteins, which are drawn rapidly from the blood just before calving, form the major proteins of the colostrum. Colostrum is rich in protein, especially those proteins containing the immune bodies protecting the calf against disease. The higher the milk production potential of the cow, the more blood proteins are drawn from the blood to make that colostrum.

To compensate for this loss of protein something must be introduced into the blood to maintain its water balance; otherwise, water from the blood will be withdrawn into the tissues. This situation is now known to be the basic cause of swollen or edematous udders.

Experiments with blood plasma substitutes and water-holding carbohydrates, such as dextrans, have indicated that only temporary relief can be expected from injection of such materials directly into the blood stream. However, injection of concentrated solutions of certain blood proteins obtained and purified from the blood of other cattle has shown promise.

Such purified blood proteins are extremely expensive in the amounts required. The treatment cannot be recommended at present, therefore, as a practical procedure.

With the advances in recovery of blood protein constituents confidently expected, however, this basic discovery of why edematous udders occur will set the stage for the practical solution of the problem in dairy herds.

Leptospirosis problem grows

Leptospirosis of both man and animals is a major health problem because diagnosis and control is difficult, according to an article in Veterinary Medicine, a professional publication.

Signs of leptospirosis in animals closely resemble several acute respiratory diseases, brucellosis, and other diseases. Physicians find symptoms of leptospirosis in man which may resemble brucellosis, hepatitis, and even nonparalytic polio.

The specific organism which causes leptospirosis is shed chiefly in the urine from infected animals. Sometimes they carry and spread the disease for many weeks after they appear to have recovered from an acute attack.

Laboratory tests are required to determine whether leptospirosis is the cause of illness in animals, or whether animals which have apparently recovered from the disease are no longer carriers of the infection, the American Veterinary Medical Association says.

Rats are generally considered as the chief source of leptospirosis infection in man which is one more reason for their elimination, the association says. Dogs are often the source of the infection in man. Also, human beings should be warned of the danger of close association with infected animals and their waste products.

A college senior dated a young lady from a nearby girls' school a few times. Then some weeks passed, and when she hadn't heard from him she sent a telegram reading: "Dead, delayed, or disinterested?"

To which the young man promptly wired back: "Hunting, fishing, or trapping?"

Permanent pipes for water systems

A method for laying underground water pipes between farm buildings, one which eliminates the need for ever digging them up, is suggested by W. C. Krueger, agricultural engineer at Rutgers University.

Instead of laying the water pipe directly in the trench, lay a 4-inch line of cemented-joint sewer pipe below the frost depth. The smaller water pipes can be pushed through this larger line, which permits them to be removed for repairs at any time.

Another advantage of this new method is that hot air can be blown through the 4-inch pipe in the event that a severe freeze should form ice in the water line itself.

Iowans double irrigated acres

Acres of cropland irrigated in Iowa in 1956 were more than double the 1955 figure.

Results of a statewide survey announced at Iowa State College show that 401 operators irrigated a total of 26,897 acres of cropland in 1956. Reported total acreage for 1956 is 14,654 acres more than were irrigated in 1955. The number of operators irrigating crops increased 150 from previous year.

In reviewing the survey, Craig Beer of the college staff said information on total acres irrigated in 1956 was not reported for 70 of the 401 operators. Conservatively estimating that each of the 70 operators irrigated 20 acres would boost the total acreage irrigated in 1956 to 32,000 acres.

About 60 per cent of the reported total acreage was irrigated by the sprinkler method. Surface irrigation was used on the remaining 40 per cent.

Sixty per cent of the operators reported they obtained water from rivers, streams, lakes, or similar surface water supplies. The remaining 40 per cent said they obtained water from drilled wells.

A total of 75 Iowa counties reported some irrigating last year.

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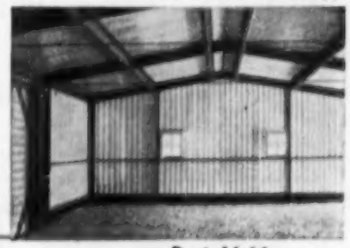

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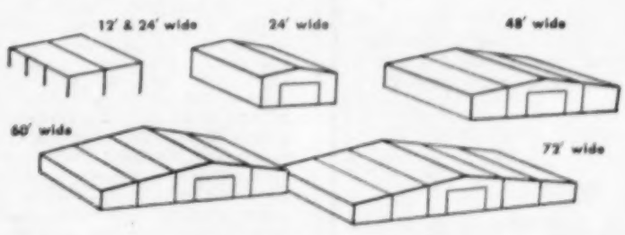

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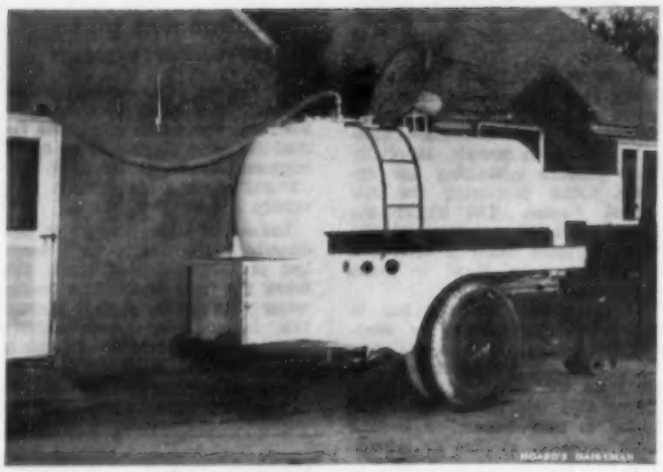

BULK TANK ON TRAILER was used to haul milk every day and every-other-day so bacteria count could be made for the two systems.

Everyday versus skip-day bulk pickup

Either system satisfactory if milk is of high quality and is quickly cooled. Store under 38 degrees.

by Leonard R. Dowd

IN DISCUSSING the difference in the quality of milk as affected by the everyday or the every-other-day pickup, we must make several assumptions.

First, let us assume that the cows are clean and healthy.

Second, that all of the milk equipment is properly cleaned and sanitized.

Third, that the bulk tank was properly engineered and constructed so that the milk will be properly cooled and held.

The bulk tank should be capable of cooling the first lot of night's milk to below 38 degrees in less than 1 hour. When each subsequent milking is added, the temperature of the milk in the tank should never rise above 45 degrees.

The milk from each milking should be cooled to below 38 degrees within 1 hour after the last of the milking is added. The above requirements are basic to the production of a quality product regardless of which system of milk pickup is used.

In 1954, the University of Connecticut purchased a vacuum bulk tank on a trailer so that we could use the unit both as a farm bulk tank and a tank for transporting the milk to the processing plant.

For one year we made daily standard plate counts on the milk. They varied from 3,000 to 200,000 bacteria per cc, and for the milk picked up every-other-day, the variation was from 3,000 to 290,000.

The lowest monthly average under everyday pickup was 3,000 and for every-other-day pickup 3,100, while the highest monthly average for everyday pickup was 22,000 and for every-other-day pickup 28,000. The yearly average count for everyday pickup was 6,900, while the average for every-other-day pickup was 7,800 per ml.

We also tried picking up the milk every third day and on 17 trials found the averages to be as follows: At the end of the first day, the standard plate count was 5,800; at the end of the second day, 9,000; and at the end of the third day, the count had only increased to 11,000 per ml.

Connecticut has allowed every-other-day pickup of milk from bulk tanks for several years. C. W. Chaffee of the Connecticut Department of Agriculture reports that they are receiving twice-monthly counts from farm tank milk, and that those on every-other-day pickup are the same as those on everyday pickup. He also reports that both methods of milk pickup provide a milk supply which will consistently have a laboratory pasteurized count of less than 3,000 per ml.

Practice has shown in the Connecticut market that rancidity problems can be controlled by eliminating cows late in lactation, proper installation and operation of pipelines, and good milking procedures. It is also necessary to cool the milk rapidly and to keep it below 38 degrees.

We certainly would all agree that milk does not improve on aging, but if it is high-quality milk when produced and is quickly cooled and stored under 38 degrees, it will still be high-quality milk when it reaches the processing plant under either the everyday or the every-other-day system of milk pickup.

The scientific data, and practical experience of the areas operating under the every-other-day pickup system have shown that just as good milk can be produced under the every-other-day pickup as under everyday pickup.

Captain: "So you have been complaining about sand in your soup?"

Private: "Yes, sir."

Captain: "Well, did you join the Army to complain about the food or to serve your country?"

Private: "I joined the Army to serve my country, not to eat it."

The author is an associate professor of dairy manufacturing at the University of Connecticut.

FEEDING

by N. N. Allen

When changing to barn feeding

Unless the change is made gradually, production may suffer. It's a good time for self-feeding roughage. Cull low producers and fit your herd to barn size.

IN THE areas where most of our dairy herds are found, there are two periods when the cows must adjust to rather drastic changes in feeding and management. These are when they go on pasture in the spring and when they come into the barn for the winter.

The second of these is now facing us, and it is well to use care in getting the herd on winter routine as smoothly as possible.

On pasture the cows are self-fed their forage in fresh condition. The concentrate, or the "grain" as we often speak of the concentrate mix, is used to balance out their needs when the pasture is good. Hay and silage also may be fed when the pasture gets short.

In the winter, all of the feed is taken from storage. The cow gets only the feed which is portioned out to her. This can work two ways. If the owner is a stingy feeder and the cows have been on good pasture, production may take a drop when barn feeding begins.

On the other hand, one who is a liberal winter feeder may have taken too much for granted as to the feed the cattle have been getting from the late pasture and production may pick up when he gets the herd in where he knows just what they get.

Neither is the best way to handle them. The really good dairyman will watch his pasture and his cows closely and they will be well fed while on pasture. Then, when they are brought into winter quarters, he will try to keep them equally well fed so that production remains on an even keel through the change.

Change may be gradual . . .

The break from summer to winter feeding ordinarily should not be an abrupt one. We are not likely to have top-quality pasture right up to the day the cows are brought in for the winter.

As the days get shorter and the nights cooler, the grass stops growing and starts maturing. It goes down in protein and up in fiber. And it becomes harder and harder for the cows to fill up in a normal grazing day. This not only means that the protein of the grain mix should be brought up to the winter level and that it should be fed more liberally, but it also means that hay or silage or both should be fed.

It will not take as much hay and silage as the cows will eat during the winter as long as they are getting some grazing, but it will not be long until we can just about forget about the feed they get from grazing. The question is, just how can we judge how much hay and silage to feed while they are still grazing?

Self-feed roughage outdoors . . .

The cows will be glad to figure this one out for us. All we need to do is to give them all of the hay and silage they will eat. That is what we usually do during the winter. They will eat less now by whatever amount they take from the waning pasture.

But it is not so simple to do this if they are fed in the barn. It does not take long to eat the grain. They can take care of it while being milked, but it takes time to eat the hay, and it is a shame to keep the cows in, even at night as long as the weather is so nice. The cows are in for a long siege in the stanchions between now and spring at best. It also means more work cleaning the barn.

Some well-built outdoor hay racks and feed bunks are the best answer. They will give the cows all of the time they want to eat hay and silage, and at the same time, they can get in some grazing whenever they feel like it. It suits them fine to have their roughage served up picnic style as long as the weather does not get too rough, and it saves some work while permitting the cows to get the last bit of food out of the pasture. The fall and spring months are the times when the outdoor feeding equipment is appreciated most.

Outdoor feeders should be built on skids or wheels for easy moving. Fresh silage must be fed daily, but the hay rack should be made big enough to hold several days' supply. A roof is not absolutely necessary, but it protects the hay during rainy weather and is well worth the extra cost. One or more sections should be hinged for easy filling.

The heifers can be left outside even longer than the cows as long as plenty of feed is furnished, but don't do it unless they are fed well. They will be the money makers in a short time, and we cannot afford to let them slip.

It is culling time . . .

If the herd has not already been culled down to barn size, it must be done soon. Those cows with shy quarters or other defects, and the ones that are just naturally not the best milkers should give way for the good heifers that are due during the fall and early winter months. Even in the culling, the outdoor feeding equipment may find profitable use.

When all dairymen are trimming the herds to barn size, prices for cutters and canners usually take a nose dive. It often pays good returns to dry them off and fatten them up a bit. While the market is recovering from the flood of slaughter cows, they will be improving in finish and grade to give good returns on the feed and labor. No shelter is needed for this short time feeding operation.

Meanwhile, the milking herd should have taken the change from summer to winter treatment right in stride if close attention has been given to their feeding during the period of change.

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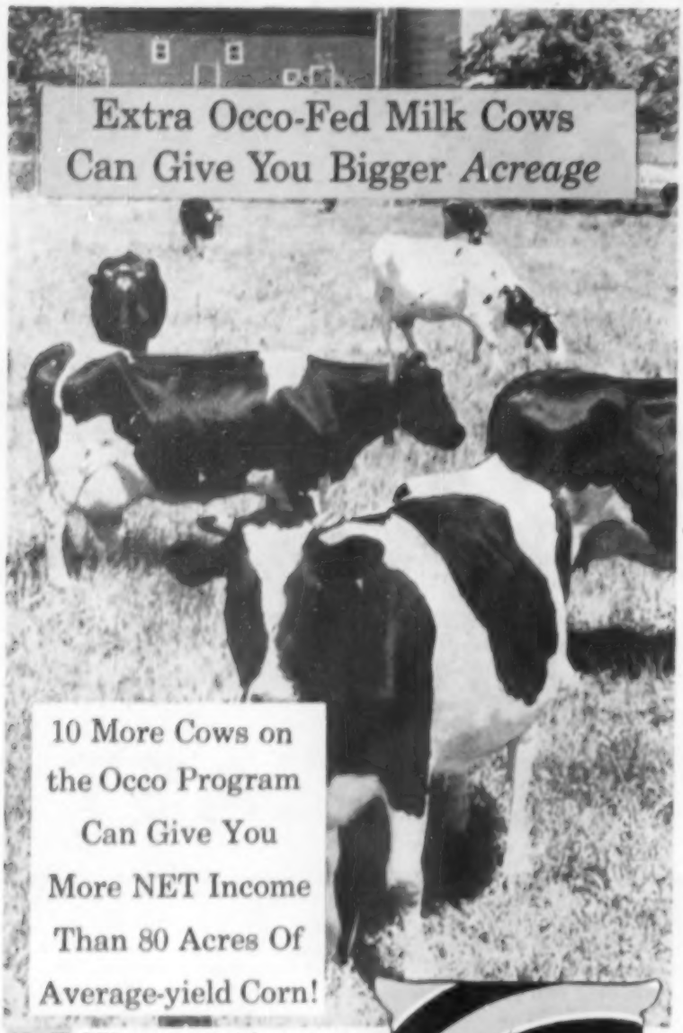

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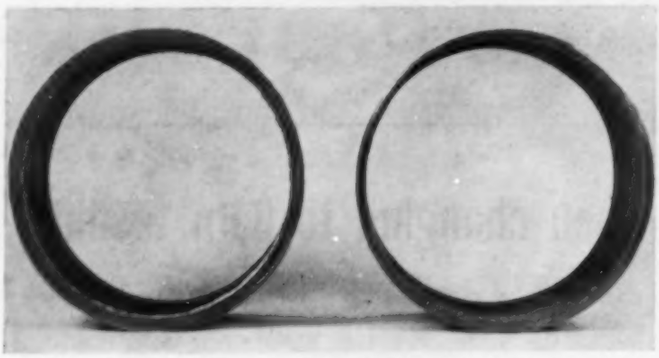

STEEL PIPE on left weighs 14.62 pounds and well casing on right only weighs 8.79 pounds per running foot. The standard steel pipe is 50 cents to $1 per foot more but it has a much longer useful life.

Select the best well casing

Insist on standard steel pipe, 4-inch minimum inside diameter, for a submersible or deep well jet.

by Dale O. Hull

EACH year more and more dairymen find that dug or bored wells won't produce enough water to keep their dairy cows well supplied. It takes lots of water to operate a modern dairy farm. Besides, there is need for water to meet other domestic uses.

Increasing frequency and length of drouth cycles have contributed to the reduced ground water supplies available from dug or bored wells. Wells drilled into deep-lying, unconsolidated, or consolidated water-bearing beds are being called upon more and more as a reliable source of water by dairy farmers. They include sandstones, shattered limestones, and deep gravel beds.

Drilled wells are constructed in most areas by local well drillers. The local driller is usually the one who is best acquainted with underground water-bearing beds.

Yield 3 gallons per minute . . .

A drilled well should yield a minimum of 3 gallons per minute when pumped continuously. Higher yields (5 to 25 gallons per minute) are desirable but not always attainable.

To determine the yield of a well, the driller should install a pump for testing purposes. Pumping should continue for several hours or until the water is clear. When pumping begins, the level of the well (static level) will drop until water is flowing into the well as fast as it is pumped out. This is the continuous pumping level.

Your driller should pump the well until the pumping level is reached. Then the pumping should continue for about four hours. The yield (pumping rate) should be measured every half hour. You only need a pail of known size and a watch with a second hand to measure the yield.

Use best casing . . .

Drillers have for many years used conventional steel water well casing in well construction. This water well casing is a lighter material than standard steel pipe. In areas where corrosive soil or shale deposits or highly-mineralized rock are penetrated, corrosion has reduced the life of the well casing. It has resulted in short life (10 to 15 years) for many farm wells. This is particularly true in areas underlaid by coal seams.

Many well drillers in Iowa use the 5.5-inch outside diameter water well casing. This is known as the 5 3/16-inch casing because that is its approximate inside diameter. The actual inside diameter is 5.192 inches. The resistance of any metal to corrosion is related to its mass or weight. The 5 3/16-inch inside diameter well casing weighs 8.79 pounds per foot. Its wall thickness is 0.154 inches or approximately 5/32-inch.

Use standard steel pipe . . .

Because of the relatively shorter life of well casing, many authorities now favor the use of standard steel pipe as a well-lining material. A 5-inch standard steel pipe has an inside diameter of 5.047 inches. It weighs 14.62 pounds per foot of length, as compared with 8.79 pounds per foot of length with the well casing.

This is a difference of 5.83 pounds or 66.4 per cent heavier. It is more than ¼ inch thick.

For practical purposes then, the standard steel pipe has two-thirds more weight than well casing and should have a much longer life when installed in farm wells.

Too many of our drilled farm wells have been started too small and well size at the pumping level is not large enough to permit the use of modern pumps. For example, the minimum inside diameter of casing permissible for use with either the submersible turbine pump or deep well jet unit is 4 inches.

A well driller might start out using a 5-inch casing, drop off to a 4-inch casing when difficult strata is encountered, and end up by finishing off the well with a 3-inch. If the water does not rise up into the 4-inch casing, it is then necessary to install one of the old style cylinder pumps which has a slower pumping rate.

Revised well practice . . .

As a result of this practice, our Iowa Agricultural Stabilization Committee (A.S.C.) has revised their water Well Practice.

Paragraph two of the Iowa A.S.C. docket has been amended to read as follows:

"Drilled wells must have a bot-

The author is an extension agricultural engineer, Iowa State College.

tom (penetrating stone strata which needs no casing) of not less than 4 inches in diameter and a final or minimum size casing of 4-inch inside diameter when cased with first-grade material with a minimum pumping capacity of 3 gallons per minute for 4 hours (720 gallons). Minimum pumping capacity for drilled wells must be certified by the driller."

In addition, our Iowa A.S.C. requires that the driller keep an accurate log of his drilling and save samples at each 5-foot interval to be supplied to the Iowa Geological Survey to assist in their evaluation of our ground water reserves.

Before drilling . . .

Have an understanding with your driller about the size of your well. Insist that it have a minimum pumping capacity sufficient to handle your dairy farm and livestock enterprise. Insist on standard steel pipe for your well lining if you are uncertain as to the life of well casing in your area.

In central Iowa, which is underlaid by the Pennsylvanian geological formation in which a lot of coal is found and which results in a highly-corrosive condition, drillers are reported to be charging about $4 per foot when using standard well casing and from $4.50 to $5 per foot when using standard steel pipe.

Insist on the 4-inch minimum inside diameter so that you can use one of the efficient, modern submersible or deep well jet pumps. And, when the well is tested, make sure that test pumping continues for several hours so you can be assured of adequate water supply.

New weather aids

While nobody ever has fashioned a divining rod which the novice could use for discovering water, climate instruments have been invented recently which the amateur can easily operate.

What is more, the instruments, when perfected, will be placed in local weather stations so more accurate weather information can be relayed quickly to the farmer when he needs it.

While the farmer's livelihood depends to a great degree on the weather, there aren't enough farmers located in one place to justify highly-trained weather personnel and expensive equipment.

Consequently, temperature readings reported to the farmer often are inaccurately high. Some important readings aren't even included in the farmer's report.

Now, C. B. Tanner and V. E. Soumi, University of Wisconsin weather scientists, have developed several machines to give farmers accurate information and still make the reading thereof easy enough so the untrained person may gather material in a hurry.

One machine these scientists have come up with is an instrument which measures moisture in the air. They call the machine a "simplified hygrometer"; its reading, dew point.

The higher the dew point reading, the higher the humidity and the less chance of frost at the critical fall and spring freeze-and-thaw seasons. This reading also is important to the farmer in the summer because he knows that the higher the humidity, the more plant diseases are likely to develop. If the dew point and humidity are high for long periods of time, then spraying may be necessary.

The new machine is housed in a simple metal box. The highest and the lowest dew points, and the present one, are read off a dial.

Hygrometers now in use are complicated mechanisms that have to be whirled violently several times to give contact with the air. Averages then must be taken to arrive at the dew point figure. Even then, maximum and minimum dew points, which are really important, cannot be recorded.

Soil temperature used to be measured with mercury-steel thermometers "planted" in the earth. The thermometer bulb itself, however, had heat capacity and gave an inaccurate reading. Then, too, one bulb gave a reading in but one section of soil.

Now, scientists have linked 15 resistance thermometers in series and "planted" them in representative places in the soil. The bulbs are connected to an indicator which averages and records them.

Soil temperature is extremely important to farmers because it influences germination of seeds, insect pest cycles, frost damage; and, with the dew point, the development of diseases.

Even accurate wind information may be provided with new, simplified machines. One has been developed with a counter which separates daytime readings from those made at night. Each hour (or as often as desired) the correct wind speed is printed on a roll of paper such as is used in a cash register.

While more incomplete than these, many simplified weather instruments are now in the offing. Weather scientists say the most important one may be a "poor man's radiometer," a machine that will measure how much energy comes from the sun and remains in the soil. It is this energy which is responsible for plant growth and is the basis for all life.

More recently, climatologists have been working on recording instruments to make data available more quickly, as well as on power systems that allow all equipment to operate on a battery power supply.

Through more and better weather information, farmers will be able to do a better job of planning their farm operations.

—BILL THIESENHUSEN

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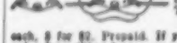

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A Vest Pocket Herd Book Is a Good Investment

In the Netherlands, they pay for protein, too

Because the protein content of milk is inherited independently of the butterfat content, the cooperatives are testing for both.

by Leland Spencer

LAST May 73 cooperative dairy plants in Friesland (northern section of The Netherlands) began paying for milk on the basis of its protein as well as its butterfat content. The tests for protein are made in a central laboratory operated by the Cooperative Dairy Federation of which these plants are members.

Cheese is the main product of The Netherlands plants, so the protein content of milk is especially important. As the relative market values of milk fat and solids-not-fat have changed in recent years, interest has been stimulated toward giving greater weight to the nonfat solids in pricing milk. This has been true in the United States, too.

In 1950, the Dairy Federation of Friesland interested the Frisian Herdbook Association in sponsoring an investigation. The purpose was to determine the extent to which the ability of certain cows to produce milk high in protein is inherited. This investigation resulted in a noteworthy thesis (published earlier this year—1957) by a graduate student in the Agricultural College at Wageningen.

Meanwhile, the dairy federation was influential in having research undertaken, with funds supplied by the Marshall Plan (U. S. Economic Cooperation Administration), to find an economical method of testing for protein in milk; somewhat comparable to the Babcock test for butterfat. This research resulted in a practical test called the Kofranyi method, which is now being used.

Under the new system, the price paid for each farmer's milk is calculated as follows:

Milk fat price x per cent of fat plus protein price x per cent of protein less the operating cost per hundredweight.

For example, the price per hundredweight of milk would be computed as follows:

made in the federation laboratory.

The report of the investigation by R. D. Politiek points out that milk samples were analyzed from 729 cows, including 238 dam-daughter pairs. Samples were taken every two weeks during the years 1953-1955. The influence of various environmental factors, such as age of cows, stage of lactation, feeding, and seasonal conditions, upon the composition of the milk was studied.

The conclusion was that the average fat and protein percentages of individual cows are affected by the environment to only a limited extent and generally in the same direction.

This study revealed a relatively low correlation between the fat and protein components of milk ($r = +.54$ and $r = +.51$ in the two areas from which samples were taken). The investigators, therefore, concluded that "the fat and protein percentages are to a high degree inherited independently."

Little correlation was found between the percentage of protein and the quantity of milk per cow. Selection on the basis of protein percentage, therefore, would not be likely to affect the milk yield significantly.

The percentages of protein and casein were found to be so closely related that a separate determination of the casein content of milk is unnecessary. On the other hand, the percentage of solids-not-fat is not a good measure of the protein content of different lots of milk.

The report states:

"It has been demonstrated that it is possible by selective breeding to increase considerably the protein content of milk. The following considerations have led to this conclusion:

"1. The fat and protein percentages are determined to about the same degree by genetic factors.

"2. The fat and protein content are to a high degree inherited independently of each other.

"3. The variation in protein percentage is smaller than that of fat, but this variation is large enough to permit successful selection on the basis of protein percentage."

"For The Netherlands, and for Friesland in particular," the author says, "it is definitely warranted to base the payment for milk on fat and protein percentages, and to select not only on fat content, but also on protein content."

	Fat	Protein	Total
Pounds per hundredweight of milk	3.5	3.4	
Gross value:			
1 per cent	$0.567	$0.236	
Actual per cent	1.985	0.802	$2.787
Operating cost (deduct)			—0.522
Net value			$2.265

Note: The net value per hundredweight appears low in comparison with U. S. milk prices, but this has nothing to do with the method of payment. Recent wholesale prices in The Netherlands were 49½ cents a pound for butter and 24 cents a pound for cheese (equivalent prices in U. S. currency).

Beginning in October of this year (1957), the Frisian Herdbook Association will record the protein content of the milk produced by each cow as well as the fat percentage, based on determinations

The author is professor of marketing in the department of agricultural economics, Cornell University, New York.

This article is based largely on information supplied by Dr. P. Stallinga, secretary of the Cooperative Dairy Federation of Friesland, located at Leeuwarden, The Netherlands, and upon a summary of the report, "The Influence of Heredity and Environment on the Composition of Milk of Frisian Cows and the Practical Possibilities of Selection on the Protein Content," by R. D. Politiek, Wageningen Agricultural College, The Netherlands, February 1957.

How good is your roughage?

(Continued from page 1015)

mended protein levels for concentrate mixtures fed with various kinds of roughages are shown below:

Roughages	Crude protein in concentrate mixture
	Percentage
Young, succulent pasture forage	8-10
Legume hays and silages	10-12
Legume hay with grass or corn silage	12-14
Mixed (legume and grass) hays and silages	14-16
Mixed hay and non-legume silage	16
Grass hay and non-legume silage	16-18
Pasture advancing in maturity	14-18
Low-quality roughages (grass hays, straw, stover, corncobs, etc.)	18-24

One other deficiency of poor-grade roughages is energy, commonly measured as total digestible nutrients (T.D.N.) or estimated net energy (E.N.E.). As mentioned earlier, the amount of productive energy in forages is indicated to a large extent by its crude fiber and lignin content. Generally, as forages decrease in their milk-producing ability, these two constituents increase or become more complex. As a result, dairymen must do everything possible to keep the crude fiber and lignin content of forages at a relatively low level.

The question arises as to whether this loss in energy content as forage decreases in quality can be made up in the concentrate portion of the ration. To my knowledge, there have been no experimental studies which compared the milk production of cows fed good roughages supplemented with grain in the normal manner with cows fed low-grade forages with unlimited supplementation. When I say unlimited supplementation, I am referring to grain mixtures which contain added amounts of minerals, vitamins, proteins, and so forth, and fed in unlimited quantities. Experimentally, we have only indirect data available.

In the Kentucky experiment referred to previously, when a medium-quality timothy hay was fed over an entire lactation, a grain mixture was fed that was adequate in protein according to present feeding standards and was supplemented with extra calcium, phosphorus, and vitamins A and D. The rate of grain feeding in this study was extremely high, averaging 1 pound of grain to every 1.94 pounds of milk. Even with this high rate of grain feeding, milk production was not maintained at a high level. As mentioned previously, the cows averaged only 6,706 pounds during the entire lactation as compared to an average of 10,488 for the previous lactation.

The Cornell Station reported similar data a few years ago. These studies showed that early-cut timothy hay was worth up to 40 per cent more than hay cut in the late stage of maturity. Early-, medium- and late-cut timothy and clover hays were supplemented with high levels of grain, but each hay was supplemented with the same amount of grain.

For example, late-cut timothy hay was supplemented with grain at the rate of 1 pound of grain to every 1.8 pounds of milk. Still these cows produced 7.1 pounds less milk per day than the cows fed early-cut timothy hay. Similar results were found with early- and late-cut clover hays, but the drop in milk production was not as severe as with the grass hay.

Certainly data of this type are not conclusive, but they cause one to doubt if we know how to supplement low-quality forages in a manner to maintain high milk production. The cost of such supplementation usually would prove too expensive, assuming that it were possible to supplement low-grade roughages in a manner to insure top milk production.

Truly, forage quality is one of the most important problems faced by dairymen today. In these days of increased production costs and lower milk prices, dairymen must pay more attention to the quality of forage provided for the milking herd, if the dairy cow is going to compete with other farm enterprises.

THE END

New Zealand to promote new butter markets

With the current low price of butter on the British market, and the loss of several important foreign markets due to bilateral trade agreements by Denmark and other competitors, New Zealand has decided to develop its foreign marketing program in other countries. She will also attempt to increase British demand for her butter.

To accomplish this program, the New Zealand Dairy Products Marketing Commission has recently allocated one million dollars for advertising butter in foreign markets, of which $670,000 are to be used in the British market alone.

New Zealand is faced with a decreasing market in West Germany, which, apart from the United Kingdom, is the largest butter market in Western Europe. No New Zealand butter was exported to Russia in 1956, although it was the largest buyer outside the United Kingdom during the 1954-55 season.

New Zealand trade reports have noted that Denmark recently entered into bilateral trade agreements with West Germany and Russia, and obtained thereby several important advantages in the sale of butter.

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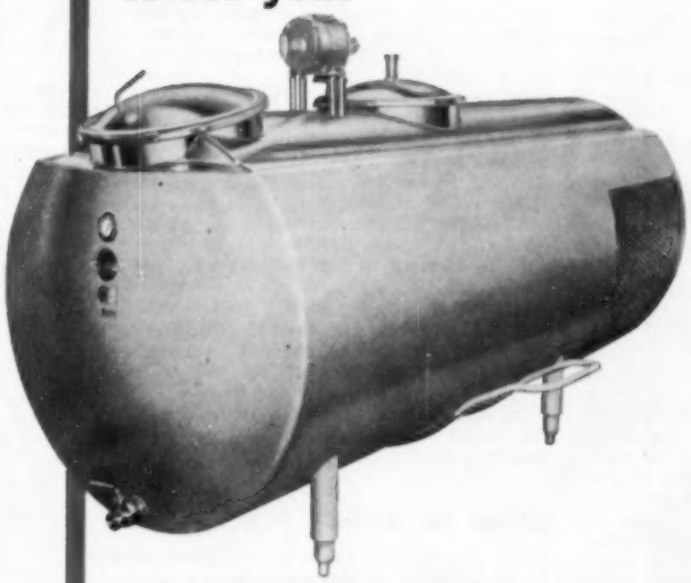

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Perfect companion for a pipeline milker, the new De Laval Vacuum improves milking . . . eliminates the need for milk handling equipment—pump or automatic discharger . . . makes less total cost for Combine Milker and tank.

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EDITORIAL COMMENT

WILL DAIRY FOLLOW POULTRY?

THE question most often asked of us by people outside the dairy industry involves the future nature of dairying. They speak of the possibility of contract dairying or "integration." Obviously they are thinking of what has taken place in the canning industry and, to some extent, in poultry.

Crystal ball gazing is a hazardous pastime at best but these observations are offered for what they may be worth.

In the first place, contract dairying is not entirely new. The California milk contracts represent the most advanced form of contract dairying known to us. To a degree, the use of individual handler federal order pools is a step in this direction if handlers keep supply and demand in reasonable balance.

The use of Class I bases also is bent in the direction of contract dairying.

Frankly, we see little prospect in the type of vertical integration so controversial in the poultry industry today. There is not the need for credit that is true in broiler production. We have a regular market and steady income, making seasonal financing unnecessary.

We are inclined to look favorably on a form of contract dairying. Where marketing is in this direction today, dairy farmers are enjoying better prices and are not plagued with the surpluses which depress the market.

USE THE BEST WE HAVE

EVER so often we receive a letter suggesting one of two methods for reducing our farm surplus. The first is to limit fertilizer usage. The other is to restrict agricultural research.

While the proponents of these measures are undoubtedly sincere, they have failed to weigh the results of the adoption of their recommendations. Let's look at them.

If fertilizer usage could be limited, total crop production would be reduced, providing the same acreage were planted and weather conditions were comparable. On the other hand, most production costs would go right on. In fact, production costs per unit of production would be higher. Without fertilizer, we get lower bushel yields and we save on fertilizer expense. But all other costs continue. The major difference is that those costs are spread over fewer bushels. The cost per bushel is, therefore, higher.

Since we live on net income, the difference between price received and cost of production, our price must be raised to benefit from not using fertilizer. If the price is not raised enough to offset higher per unit costs, we lose.

The reduced research proposal may appear to have surface validity. Here again, however, we stand to lose heavily. Insects and diseases, for example, wage a constant war against farm income. Were we to let them have their way, we would be inviting farm tragedy. All you have to do is think what foot-and-mouth disease would do to our livestock. There are many other threats to livestock and crops just as damaging and just as deadly.

No, we cannot make progress by turning back the clock. To increase net income, we must continue to cut costs through using methods developed by research.

When net income is not satisfactory, even when we use all the cost-cutting tools available to us, then we must find a way to improve the price through marketing channels. If this cannot be done by private effort, we turn to cooperative and even government assistance.

Remember that our concern is net income. We must concentrate on both factors, lower costs and better prices, to realize a livelihood that is just and satisfactory to us.

FREIGHT RATE DILEMMA

A FEW weeks ago we visited a farm area which, in the past, has been a prosperous agricultural region. Today, good clay land is selling for about $25 per acre and there are few takers. Many farms are abandoned. Houses and barns are collapsing with the weight of neglect.

While many factors may have contributed to the fall of this region, the primary cause has been increasing transportation costs. Located far from markets, these farmers simply could not make a go of it on what was left after transportation costs—in and out—were deducted.

It appears that freight rates are going to have a major impact on farming in other areas, too. In the East, for example, raisers of meat, milk, and eggs have been dependent, for a long time, on feed grains imported from the Plains states. Increasing freight rates mean either the grower must take less or the buyer must pay more. In either case, someone is hurt.

In the Plains area, farmers try to offset higher transportation costs by higher yields, and greater mechanization, thus reducing costs of production. This, in turn, may permit them to continue to produce feed grains at a profit.

Eastern farmers are placing ever-increasing emphasis on better grassland farming and reduced dependence on purchased feed grains.

We don't see any easy solution to the freight rate problem. Railroad wage and material costs are going up, too. Rate increases are sought to offset them. It's part of the penalty paid for a spiralling inflation.

CAUSE OF HIGHER FOOD PRICES

THE papers have been well-sprinkled with news stories on the increased cost of living. In most cases, food is singled out for particular attention. These stories are usually technically accurate but many of them have been grossly misleading.

For example, we have yet to read a news story pointing out that an hour's wage will buy more food today than it did in the high food price year of 1952. None have reported that hourly wage rates of food store employees has gone up from 75 to 104 per cent in the past 10 years. By inference, the blame for increased food costs usually is placed on the farmer and the grocer. The blame does not belong there at all. It rests entirely with a wage-cost-price inflation.

The truth of the matter is that the average factory worker is receiving an excellent bargain for his hour's work when he converts it into food purchases.

If we average factory wages and food costs in the period 1947-49 and compare those with the picture today, we find that food costs have gone up 15 per cent while weekly factory earnings are up 55 per cent.

SUCCESS IN PHOTOGRAPHING FOOT-AND-MOUTH DISEASE VIRUS

A PICTURE was taken at Plum Island, New York, recently and history was made. The subject photographed was the virus which causes foot-and-mouth disease.

Using an electron microscope, research workers discovered that the virus is about one-millionth of an inch in diameter and spherical in shape. It is the smallest of any of the viruses affecting animals and even smaller than the polio virus.

While this new finding is expected to speed up research on this costly disease, it reminds us of a series of events over the past 11 years, many of which we may have forgotten.

In late 1946, foot-and-mouth was discovered to have invaded Mexico. Our livestock in the United States were threatened. Because of this, our government sent veterinarians and workers to join Mexican personnel in a cleanup campaign. Over a five-year period, working under extreme handicaps, these men made over 432 million inspections of cloven-footed animals. The quarantine area south of the border encompassed over one-fourth of the whole area of Mexico.

To stamp out the disease, the Mexico-United States Commission had to eradicate nearly one million cattle, sheep, goats, and hogs. From February 1948 to October 1950, over 60 million doses of vaccine were administered. The campaign cost the United States $125 million.

Five years later, in 1952, another foot-and-mouth outbreak occurred in Canada. This, however, was quickly stamped out and, by late August, both Mexico and Canada were free of the disease.

A year later, in 1953, the U. S. Department of Agriculture opened the Plum Island Animal Disease Laboratory. Here, under heavy guard and maximum security, research workers could conduct an intensive study of foot-and-mouth disease.

Today, three years later, comes the significant development of the first photograph of the foot-and-mouth disease virus.

All this emphasizes not only the terrific stake we have in protecting our cattle from a serious disease, such as foot-and-mouth, but the great expenditure of time, money, and effort to secure information and develop better control and eradication measures.

We are extremely fortunate in the United States in that we have an exceptionally healthy livestock population compared to the livestock industries of many other nations. Further assurance of a healthy future is indicated by the findings at the Plum Island Laboratory and by the creation of another great animal disease control laboratory at Ames, Iowa.

Certainly this effort helps assure us that we will maintain our healthy environment and that livestock raising in the future will be even more secure from diseases and parasites than it has been in the past.

In 1916, W. D. Hoard said:

Every farm is a problem in itself. Every farmer is a problem solver in proportion as he is an earnest student of his own farm. The difficulty does not lie so much in the farm as it does to get the right kind of a man, a man endowed with the true student spirit, at the head of it.

Questions from Our Readers

Keep cows from slipping

Last year we purchased a farm with a very nice barn on it. We are running into difficulty though, because the concrete floors of the litter alley are so smooth that the cows slip on them. Four have been injured so far. Is there any preparation we can put on the floors so the cows won't slip?

Ohio **D. J. D.**

The floors are slippery because they were likely finished with a steel trowel instead of a wood float. There is no preparation that I know of which can be put on them to make them less slippery.

Attempts are sometimes made to roughen smooth concrete surfaces by etching them with muratic acid. However, if enough acid is applied to give much of a roughening effect, it usually ruins the concrete.

The most satisfactory solution to your problem would be to scrub the litter alley clean and apply two inches of new concrete over it. Finish this with a wood float and then go over it lightly with a stiff broom after the initial set has taken place.

If this will make the litter alley higher than the stall platforms, it would be desirable to knock out some of the present concrete with an air hammer.

—D. W. Bates

Stop moisture problem

During the past summer we put new combination windows on our house as we were tired of handling storm windows and screens each year. Now that the weather has gotten cold we are troubled with moisture collecting between the windows and sometimes we can hardly see out. What causes this when it didn't happen before?

Wisconsin **R. D.**

Likely the old storm windows did not fit tight and you got a considerable amount of air movement between the inside and outside windows. This carried away moisture that leaked around the inside windows which apparently are not too tight. The new outside windows, being tight, prevent the moisture from escaping and condensation takes place.

The desirable thing would be to tighten the inside windows with weather stripping. You can likely improve the situation, however, by providing some ventilation in the space that is between the windows.

Many combination windows have a small vent near the bottom which can be opened or else have a number of small slits in the bottom which are permanently open.

It may be, too, that the humidity level in your house is quite high as the result of clothes drying, cooking, and so forth. Keeping a bedroom window partially open at night and periodically "airing" the house during the day will do much to eliminate this problem. If you have a fireplace, leaving the flue open will also provide additional ventilation.

—D. W. Bates

Oil looks milky

This summer I bought a new two-plow gasoline tractor and have been using premium-quality, heavy-duty oil in it. The last time I drained the crankcase, the oil had a sort of milky appearance and I am puzzled as to what caused this. We plowed 60 acres with the tractor during the fall, but are now using it mostly for cleaning barn and other chores around the farm.

Illinois **A. C.**

The milky appearance of the oil is likely caused by water in it. This indicates that the motor is not being run at the proper operating temperature. Either the thermostat is broken or the tractor is now not run long enough at each starting for the motor to reach the proper temperature.

About one gallon of water is produced as vapor in the combustion chamber for each gallon of gasoline burned. Unless the temperature of the cylinder walls is above the boiling point of water, some of this vapor will condense on the cylinder walls and get into the crankcase.

The temperature of the cylinder walls of a gasoline engine at full load is about 72 degrees above the temperature of the cooling water and at ¼ load, about 52 degrees above cooling water temperature.

To prevent condensation, the temperature of the water in the cooling jacket should be at least 160 degrees, with temperatures up to 180 degrees being desirable.

If you put in a thermostat of the heat range indicated and work the tractor enough to get it thoroughly warmed up each time it is started, you should have no further trouble.

—D. W. Bates

ED . . . **and EMMA**

"Every last pumpkin is stored away; the potatoes are dug . . . and now to just sit back and enjoy Injun summer?"

". . . This machinery's got to be greased next, and you and Ed will have to store things away . . ."

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FREE GET THIS FAST-ACTING TUBE SQUEEZER WITH EVERY SPECIAL 12-TUBE CARTON OF TERRAMYCIN FOR MASTITIS

Now Terramycin—the fastest, surest way to treat mastitis—is easier than ever to use! A new, unique tube-squeezer premium is now being given away free with every special 12-tube barn box of Terramycin Animal Formula for Mastitis.

With this special tube squeezer, you'll have one hand free to give you better control over your cow. That's because *one* hand, *one* quick squeeze completely empties the tube. There's no wasted treatment. Your cows get the full benefit of every bit of mastitis-fighting Terramycin throughout the infected quarter.

This unique tube squeezer is engineered to last for years. Remember, it's FREE with every special 12-tube barn box of Terramycin! Get yours now while the supply lasts. For facts on why Terramycin Animal Formula for Mastitis stops mastitis faster, longer than any other treatment—why more dairymen use it than any other treatment—read the facts on the page to your right. Make the fish tank demonstration test in your own home.

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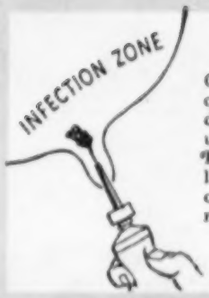
easier than ever before!

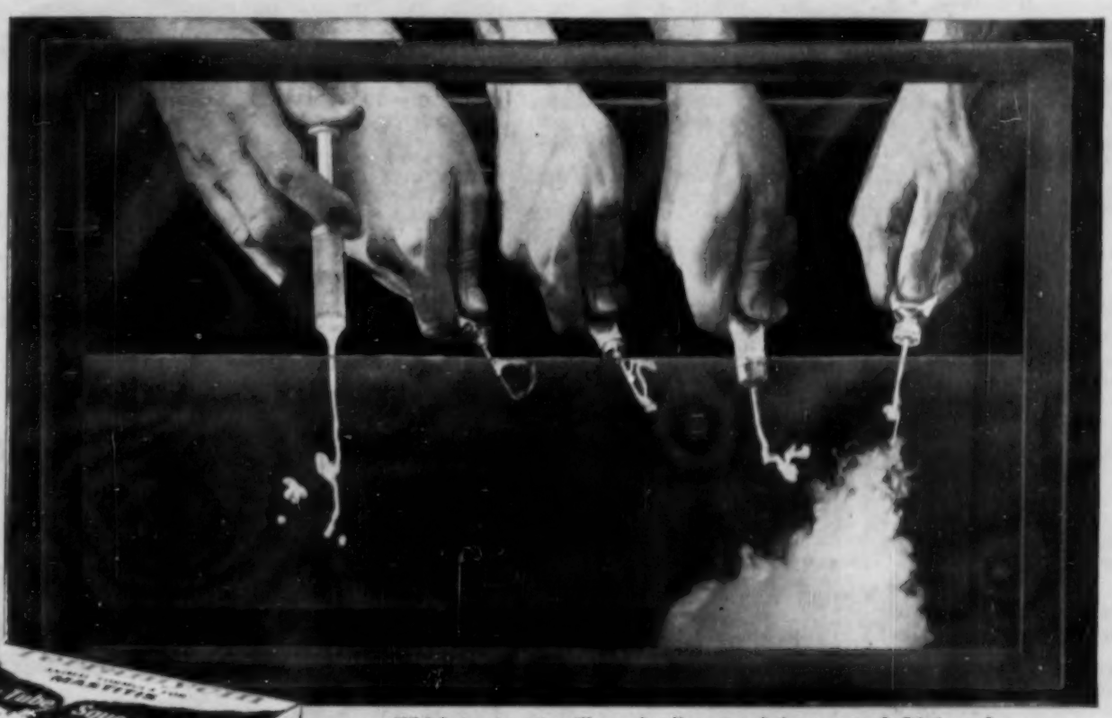
NEW LIQUID TERRAMYCIN

Pfizer scientists combined Terramycin with a fast-dispersing, liquid carrier that quickly spreads germ-killing amounts of antibiotic throughout the quarter. Results: faster recovery, fewer "half-cured" cases, fewer flare-ups later on. After Terramycin does its work, it milks out clean, leaving no oil or waxy deposits.



ORDINARY TREATMENT

Ointment-base remedies usually contain oil or petroleum jelly, can't dissolve in milk. See how they glob up, cling to walls of teat passages. Even when these remedies are loaded with extra antibiotics, they can't do a good job if they don't reach the pockets of infection.



Which treatment will reach all parts of the quarter? Of these five leading brands of mastitis treatments, only Terramycin (far right) disperses instantly. The others contain an oil or ointment base that globs up in the teat canal to prevent the antibiotic from penetrating throughout the quarter.

As you can see from the demonstration above, Terramycin for Mastitis delivers the *full power* of the antibiotic to all parts of the quarter to get fast results—even in stubborn cases.

There's another important reason why it's more effective in stopping mastitis. Powerful, potent Terramycin delivers a fast knockout punch to *all* of the most common mastitis-causing organisms.

For example: a case of mastitis may be caused by any one of dozens of kinds of bacteria or be a mixed infection. Two of the most common troublemakers are streptococcus and pseudomonas organisms.

While either penicillin, bacitracin, streptomycin or sulfonamide have activity against the streptococcus, they have no effect on the pseudomonas—even when used in combination!

But Terramycin gets both types!

Ask for the special 12-tube barn box of Terramycin for Mastitis at your animal health headquarters. If you act now before the supply runs out, you'll get the new tube squeezer FREE!

Mastitis

Pfizer

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FEEDING TIPS from your CHECKERBOARD SERVICEMAN

As a service to dairymen, this column appears monthly in Hoard's Dairyman, answering questions from readers regarding feeding of calves, heifers, dry cows and milkers.

What are the principal advantages of feeding pelleted dairy feed?

There are many good reasons for pelleting. For one thing, it locks ingredients used in small quantities, such as trace minerals, in place and assures each cow her proper portion every day in the week.

Cows like pellets and pellets help cut down waste. When bulk handling systems are used, pelleted feed will not bridge across or "chimney."

Purina's most popular milking rations are usually offered in both pellet and meal forms.

What is the difference nutritionally between good grass and good corn silage?

Grass silage is high in protein . . . low in vitamins, minerals and energy. Corn silage is generally less moist, high in energy and not very high in protein.

With grass silage it is well to feed plently of grain ration, extra high in energy. Corn silage is balanced by a grain ration containing about 16% protein if hay quality is good.

Both grass and corn silage are about one-third as nutritious, pound-for-pound, as dry hay.

Do you include any "secret ingredients" in your dairy feeds?

No. ALL of the ingredients in our feeds, as well as those of other reputable manufacturers, are listed on the tag along with a breakdown of guaranteed minimums for fat and protein and maximums for fibre content.

The proportions in which these ingredients are mixed, along with the quality of the ingredients used, make up the principal differences in rations.

There have been some ultra-scientific developments in the feed business, particularly in feeds for poultry and hogs, which are very dramatic and take on a mysterious aspect. Even so-called "miracle" drugs and growth factors, however, must be spelled out on the tag.

Answers to questions above are based on Purina laboratory and farm experiments, data gathered by Purina nutrition scientists, and the experience of Purina feeders over a period of more than 60 years. You are invited to send questions to:

Feeding Tips
Ralston-Purina Company
Checkerboard Square
St. Louis 2, Missouri

Labor costs 42 per cent lower . . .

(Continued from page 1017)

floor, loaded into silage carts, and distributed into the mangers.

Fifteen carts of silage were fed each day, about half of it being corn silage from one silo, and about half grass silage from the other silo.

Two feeds carts of grain were fed at each milking. These carts were filled in the grain room and were wheeled along the feed alleys in distributing grain in the mangers. Twenty gallons of molasses were carried in five-gallon buckets from the grain room and spread on the roughage in the mangers each day.

Of the 126 cows in this barn, 107 were milked during the observation period. Three men divided the work as follows: The first man, operating four milking machines, milked all the cows on the west side of the barn; the second man, operating four milking machines, milked the cows on the east side; and the third man carried pails of milk into the milk room, and poured it into a bulk holding tank.

The milking parlor system . . .

The second case studied was a milking parlor—loose housing system. There were 160 cows on this farm, of which 125 were milked during the period of observation. Two men were employed in the barn operations.

The cows on this farm were fed hay, silage, and grain. The hay was stored in an open-sided pole barn, and was fed by throwing down bales of hay from the open sides onto the ground and cutting the tie twine.

Silage was stored in a ground-level bunker silo, from which the cows self-fed with free choice. The labor requirements were in removing the covering and spoiled silage, chopping down the overhanging silage, and moving the feeding fence forward as the silage was eaten back.

Grain was loaded into a feed cart in the granary, and wheeled into the center of the milking parlor pit for each milking. As each cow came into her stall, she was fed grain by hand from this cart. One cart of grain sufficed for each milking.

At milking time the cows were driven from the tramp sheds and lots into the holding area adjacent to the milking parlor. The parlor had three stalls on each side of the milking pit. The entrance door and the stall inlet and outlet doors were mechanically operated by two men in the pit.

One of the men milked the cows in the three forward stalls (two on one side and one on the other) and the other man milked the cows in the three rear stalls. Thus, each man operated three milking machines which were connected to a glass pipeline system which pumped the milk directly into the bulk holding tank in the milk room.

The methods used in milking the cows in the two systems have already been described. As seen in the following table, the man-time per cow spent in the milking job was 7.1 minutes per day (3.55 minutes per milking) in the stanchion barn, and 5.5 minutes per day (2.75 minutes per milking) in the milking parlor. The milking-parlor time, unlike the stanchion-barn time, included the time required in feeding grain to each cow as she entered the stall.

Daily time required for major jobs

Job	Stanchion barn* Man minutes	Stanchion barn* Man minutes per cow	Milking parlor** Man minutes	Milking parlor** Man minutes per cow
Milking	762.0	7.1	684.0	5.5
Feeding	311.1	2.9	85.0	.7
Cleaning, etc.	600.3	5.6	342.0	2.7
Other	198.7	1.9	149.0	1.2
Total	1,872.1	17.5	1,260.0	10.1
Total in hours	31.2	0.29	21.0	0.17

* 107 cows milked; 3 men used.
** 125 cows milked; 2 men used.

In both cases the average time during which the milking machines were on the cows was much above the recommended time of three to four minutes. In the stanchion barn the average time was 7.78 minutes, with the largest number of cows (21.5 per cent) being in the time interval between 7 and 8 minutes. In the milking parlor the average time was 6.13 minutes, with the largest number of cows (27.3 per cent) being in the time interval between 5 and 6 minutes. The time difference may be due to the differences between the men, or to the fact that in one case each man operated 4 machines and in the other 3 machines, or to the fact that closer attention could be paid to the actual milking operation in the milking parlor.

Time saved in feeding . . .

A comparison was made of the daily time requirements of the feeding job, by operations, for the stanchion barn and for the milking parlor—loose housing system. Whereas all the feeding was by hand in the stanchion barn, all the roughage was practically self-fed in the loose housing system. Only the grain was fed to individual cows in the stall under this system.

To feed 126 cows in the stanchion barn required over 5 hours of man labor, while only 1¼ hours per day were required to feed 160 cows under the loose housing system.

There were substantial savings in labor time per cow milked per day in feeding dairy cows under the loose housing system versus feeding in a stanchion barn, as shown in the table. The total saving per cow milked per day of 2.2 minutes was largely the result of a saving of 1.6 minutes in the feeding of silage which required very large amounts of man labor when handled by hand. It is evident that self-feeding was most economical in the case of the most bulky feeds.

Barn cleaning cut in half . . .

The daily labor requirements in barn cleaning and related activities were roughly twice as great in the stanchion barn as in the milking parlor—loose housing system. In the stanchion barn 5.6 minutes per day per cow milked were required for this job, where-

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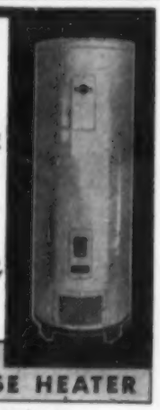

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TWICE-A-MONTH

The business paper for dairy farmers.

as in the milking parlor — loose housing system only 2.7 minutes per day per cow milked were required, a saving of 2.9 minutes per day for each cow milked.

The largest part of this saving, 2.6 minutes, was made in the manure clean-up and hauling operation. This took over three times as long in the stanchion barn as in the milking parlor—loose housing system. This was because of the necessity of cleaning the entire area every day in the former case, whereas the lounging and bedding areas were cleaned only once a year in the latter case.

How costs compared . . .

It is evident from the facts already presented that the man-labor requirements for the dairy barn chore work with a herd of 125 to 160 cows can be reduced from 3 men to 2 men in shifting from a stanchion barn system to a milking parlor — loose housing system. The big question, then, for the farmer considering going into milk production is: Will the cost of providing a milking parlor —loose housing set-up be greater than the cost of a stanchion barn, and, if so, by how much?

The capital invested in the layout on the farm cited above, operating under the milking parlor—loose housing system, is shown, by categories, from original cost records, in the following table.

Capital investment for 160 cows with milking parlor—loose housing system

	Total	Per cow in herd*	Per cow milked**
6-stall milking parlor and milk room, including high-pressure water pump	$ 5,300	$ 33	$ 42
Oil furnace for water and space heating	700	4	6
6-stall pipeline milking system (glass lines)	2,250	14	18
800-gal. milk holding and cooling tank	2,600	16	21
Compressor for cooling system	1,400	9	11
Milk pump (not needed if milk tank truck for hauling milk available)	200	1	2
Total in milking parlor and milk house	$12,450	$ 78***	$100
Two tramp sheds (6,000 sq. ft.) / Concreted yards, etc. (14,530 sq. ft.)	$11,400	$ 71	$ 91
Hay barn (pole type—200 ton hay capacity)	2,300	14	18
Bunker silo, ground level, with concrete floor and wooden sides (700-800 ton capacity)	850	5	8
Total in loose housing and feed storage	$14,550	$ 91***	$116***
Total investment in facilities	$27,000	$169	$216

* 160 cows
** 125 cows
*** Columns do not add vertically because of rounding

On the farm studied, with 160 cows in the herd, this investment averaged $169 per cow, or $216 per cow milked (125 cows on the day observed). This investment per cow with the milking parlor—loose housing set-up is in sharp contrast to the estimated $400 to $600 per cow for similar facilities required in a stanchion barn arrangement with hay storage above the cows and with upright silos.

Thus, a farmer going into milk production with no existing facilities can expect considerably lower capital investment and labor requirements in the milking parlor—loose housing arrangement. In addition, this set-up provides much more flexibility for herd expansion than does the stanchion barn.

The milking parlor—loose housing system, as compared with the conventional stanchion barn, illustrates a very unusual situation, a situation in which improved labor efficiency (or labor saving) is the result of **less, rather than more, capital investment.**

A more common problem facing dairymen, however, is the question of shifting from a stanchion barn to a milking parlor—loose housing system. In this case, a large amount of capital is already tied up in existing facilities. How much of these facilities can be used if a change-over is made? How much new investment will be required to make the change-over? Can capital be obtained for the conversion? And will the savings in labor cost pay for the capital required?

In an operation on the scale of the two cases observed, it seems that the time of one man can be eliminated by using a milking parlor with a pipeline milker and with loose housing. The saving of one hired man, counting his wages and perquisites, amounts to at least $1,800 per year under conditions presently existing in most of Virginia. How much can the farmer afford to invest in order to save $1,800 per year?

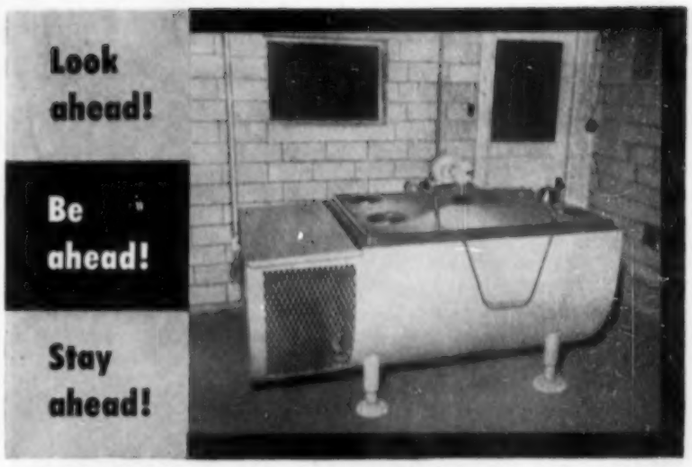
The answer will vary with different situations, but if we estimate that 15 per cent per year would cover interest, depreciation, repairs, risks, and other incidental overhead costs, it would seem that at least $12,000 ($1,800 ÷ 15 per cent = $12,000) could be invested profitably.

However, if a farmer thought that 10 per cent instead of 15 per cent would cover all capital overhead costs, then he would figure that he could afford to invest $18,000 ($1,800 ÷ 10 per cent = $18,000) in order to realize an annual saving of $1,800. Or, if his labor saved amounted to $2,400, using a rate of 15 per cent, he could afford to invest $16,000 ($2,400 ÷ 15 per cent = $16,000).

And, if additional milk output or returns could be obtained through improved milking techniques brought about as a result of changes in the set-up, then larger investments in new facilities would be justified.

In considering a change-over, pick from the last table those items which would have to be acquired or provided new. Add to their total the cost of modifying existing facilities to make them useful in the revised set-up. This total should approximate the total amount of capital required. If this total is less than the capitalized value of the labor saved, the proposed change would be profitable.

For instance, a farmer might determine that he would have to spend $11,000 to make the change-over, as follows: new milking parlor, $2,500; pipeline milker, $2,000; bulk tank and compressor, $4,000; and remodeling, $2,500. This $11,000 is less than the capitalized value at 15 per cent of $1,800 saved in annual labor cost, and so the change would appear to be financially justified. **THE END**



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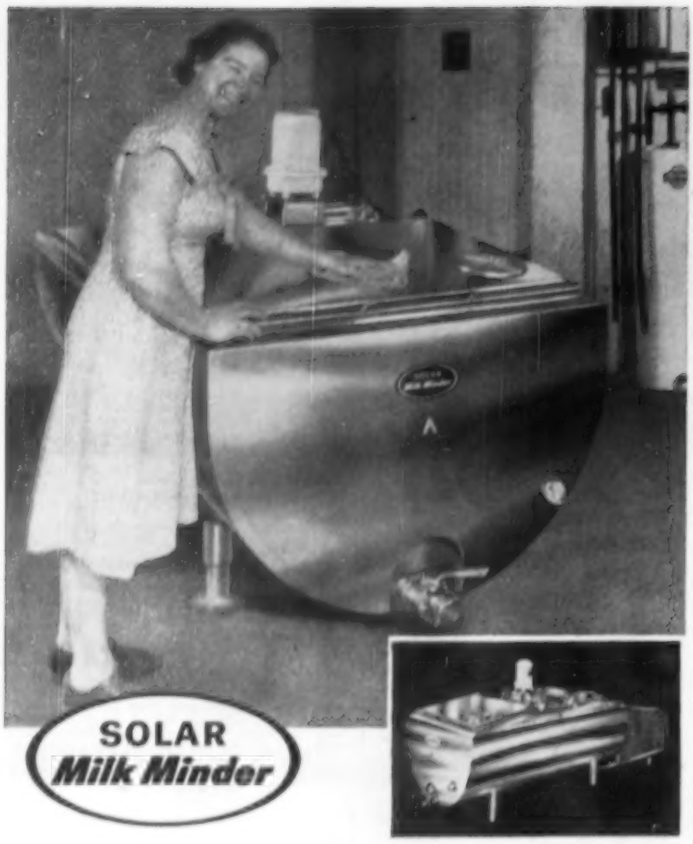

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10-57HD-2

—Courtesy Illinois Natural History Survey

SAN JUAN RABBIT is innocent looking, but if given half a chance, he will cause considerable damage to both pasture and hay crops.

Stop the San Juan rabbit

Dairymen have been alarmed by its burrowing habits and its large appetite for green vegetation.

by James S. Ayars

A NUISANCE sometimes, the native cottontail can do little real harm to the average dairyman. But the San Juan rabbit, a newcomer to the continental United States, is different.

About twice the size of the cottontail, the San Juan has recently been introduced into Pennsylvania, Illinois, and a few other states by sportsmen who want to improve their hunting. In none of these states has it yet become well established over a wide area. But it has shown itself able to survive under rigorous weather conditions.

The San Juan rabbit takes its name from a small group of islands in Puget Sound, off the coast of Washington. Nobody seems to know whether it is an offspring of Belgian hares and other tame rabbits gone wild, or a descendant of wild European rabbits introduced by the Hudson's Bay Company more than half a century ago. No matter what its pedigree is, it has the same burrowing, eating, and prolific breeding habits as the wild European rabbit that for centuries has been a pest in England and on the Continent and that has overrun Australia and New Zealand.

Introduced rabbit disease . . .

In a desperate battle against this rabbit, which was introduced from Europe nearly a century ago, Australia and New Zealand have spent hundreds of millions of pounds. They have tried to fence out the animal. They have shot it, trapped it, hunted it with dogs, poisoned it, and gassed its burrow. Not until 1950, when Australia successfully introduced the rabbit disease known as myxomatosis, did either country find a control.

By 1952-53, after about four-fifths of the rabbits of Australia had been killed, the annual value of rural production in that country increased about 50 million pounds (about $140,000,000). This figure represents a conservative estimate of the yearly cost of damage that had been done by rabbits in Australia before myxomatosis was introduced. The disease has been less successful in New Zealand, but it is doing a good job in England and France.

When Leo Couch of the old United States Biological Survey (one of the predecessors of the U. S. Fish and Wildlife Service) visited one of the San Juan islands in 1924, he found "practically all the succulent forage was eaten close to the ground. . . . Industrious burrowing had wreaked vengeance on the island."

Importations from the San Juan Islands to other parts of the United States have been going on for at least two years. The total number of rabbits imported is not known, but the number from the largest island in a single year is said to have been about 50,000.

Because the San Juan Islands are part of the United States, the federal government has little control over movement of the rabbits into states that do not have laws against them.

Some of the sportsmen who have introduced San Juans are not so enthusiastic over them as they once were. Roger M. Latham of the Pennsylvania Game Commission reported recently that "Already in Pennsylvania, many of the clubs which have imported San Juans are disappointed in their sporting qualities." The rabbits have shown a tendency to sit in their burrows during the daylight hours and to provide a poor chase for the hounds. So the pressure for introductions may subside.

Most wildlife technicians side with farmers in opposing introductions of the San Juan. Game department officials of more than half the states have taken definite stands against it.

Dr. Thomas G. Scott, game specialist of the Illinois Natural History Survey, in referring to San Juans in his state, recently summed up the situation nicely.

"Sporting qualities of the San Juan rabbit do not justify the risk of letting it become established in Illinois," Dr. Scott said. "Sportsmen stand to gain little or nothing, and farmers might suffer severe crop losses if it ever becomes established in large numbers."

What's your dairy I.Q.?

by Charles E. French
Agricultural Economist
Purdue University

The most dramatic changes in the dairy industry are probably occurring right on our own farms. Answer these 12 questions and turn to page 1046 to see how your answers compare with the experts.

1. When broadcasting fertilizer you should put on enough for which of these periods?
___(a) the present crop only
___(b) next year
___(c) three or more years
___(d) never broadcast

2. Which of these answers best describes your feed and milk prices in 1956?
___(a) 100 pounds of milk would buy more feed in 1956 than in 1955.
___(b) 100 pounds of milk would buy less feed in 1956 than in 1955.
___(c) 100 pounds of milk would buy less feed in 1956 than in 1954.
___(d) 100 pounds of milk would buy less feed in 1956 than average from 1933-52.

3. Which state gets the greatest percentage of its cash farm income from dairy products?
___(a) Wisconsin
___(b) New York
___(c) Wyoming
___(d) Vermont

4. How many hours of labor does it take to care for the average dairy cow for a year?
___(a) 110
___(b) 20
___(c) 270
___(d) 410

5. A dairy herd tends to fit which of these situations best?
___(a) short on capital
long on labor
poor land
___(b) medium on capital
long on labor
medium land
___(c) long on capital
short on labor
medium land
___(d) long on capital
short on labor
very good land

6. What part of the milk produced in this country is fed to calves?
___(a) 3 per cent
___(b) 11 per cent
___(c) 23 per cent
___(d) 51 per cent

7. What part of our farm homes have TV?
___(a) 4 per cent
___(b) 53 per cent
___(c) 17 per cent
___(d) 31 per cent

8. How much does a stainless steel milk strainer cost?
___(a) $20
___(b) $3.50
___(c) $13.50
___(d) $31

9. What percentage of our dairy farms have milking machines?
___(a) 73 per cent
___(b) 95 per cent
___(c) 61 per cent
___(d) 43 per cent

10. What conception rate should you get on the first service with artificial insemination?
___(a) 50-55 per cent
___(b) 85-90 per cent
___(c) 75-80 per cent
___(d) 65-70 per cent

11. What is the minimum daily need of salt supplement for a high-producing cow?
___(a) 1 ounce
___(b) 1 pound
___(c) ¼ of an ounce
___(d) 7 ounces

12. How much can you afford to spend for a labor-saving device if it saves you $300 worth of labor a year, will last 10 years, and won't change your fuel or electric bill?
___(a) $3,000
___(b) $2,000
___(c) $5,000
___(d) $1,200

New Holstein record

A registered Holstein cow owned by U. S. Department of Agriculture Dairy Research Branch, Beltsville, Md., has made a new butterfat record for senior 4-year-olds milked twice daily in the Advanced Registry testing program.

B D I Algodo Olive produced 23,981 pounds of milk and 1,178 pounds of butterfat in 365 days. The previous record was 1,050 pounds of butterfat, established in 1954 by Nowisco M B B Jean, owned by the Northern Wisconsin Colony and Training School at Chippewa Falls, Wis.

The new national champion was bred at Beltsville and has completed three lactations.

Ten rules for health

Dr. Edward L. Bortz, of Philadelphia, at a Michigan conference of doctors suggested the following rules to win healthy added years:

1. A well-rounded diet, with more lean proteins as age increases;
2. elimination of waste products for body cleanliness;
3. rest;
4. recreation;
5. a sense of humor as a good antidote against tension;
6. avoiding anger, hate, and jealously which create tensions;
7. companionship;
8. keeping a sense of pride in one's job;
9. participating in community affairs;
10. keeping an open mind.

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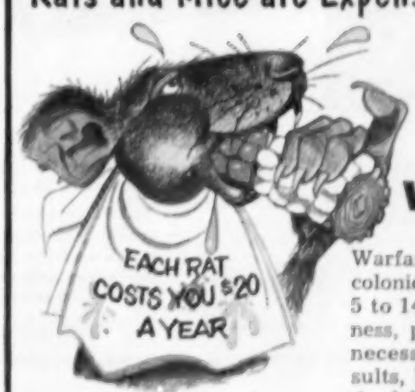

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Buy From Our Advertisers . . . They Are Reliable.

Keep electric motors from "burning out"

(Continued from page 1018)

A third type of delayed-action fuse is the cartridge which is available in sizes from 1/10 to 600 amperes.

Sad but true, most motors used on the farm do not have adequate protection. The question arises then as to how the correct protection can be installed. If a circuit breaker is to be used, it is only necessary to connect it into the hot wire serving the motor and mount it in an accessible location. A delayed-action fuse for motors on 120-volt circuits can be connected into the line serving the motor by using a special receptacle that has a regular plug-fuse socket and can be mounted on a junction box.

These receptacles are of two types: One has a switch for controlling the motor and the other has an outlet below the fuse into which the motor can be plugged. For motors on 240-volt circuits it is necessary to use a 2-pole combination fuse and switch box. Two delayed-action fuses are necessary as previously mentioned. They can be of either the screw base or cartridge type, depending upon the type of switch box used.

For motors below 2 horsepower, the switch box should have an ampere rating double that of the motor it serves or a horsepower rating equal to that of the motor. Motors which are of 2 horsepower or above should be served by a switch box designed for motor control and should be rated in horsepower.

If a delayed-action fuse blows or a circuit breaker trips, something is wrong. Find out what it is. Don't just put in a new fuse or re-set the circuit breaker and hope it won't happen again.

These are some of the causes that might be looked for:

1. Low voltage on the line supplying power to the motor.
2. Friction within the motor due to worn bearings or faulty lubrication.
3. Overload on or damage to the equipment the motor operates.
4. Lack of ventilation of the motor windings as a result of accumulated dust and dirt in the air passages.

A motor in operation should never become so hot that one cannot hold his bare hand on it for at least 10 seconds.

If the installation of motor overload protection entails any changes in permanent wiring, be sure to have the changes made by a qualified electrician. No motor should be operated without adequate protection. **THE END**

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PIPELINE INSTALLATION IN ILLINOIS: Harry Thedorff of Belvidere says this about his new Wilson cooler: "I am more than pleased with its sure, safe, fast cooling; the true economy; and the easy cleaning."

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Tired of cleaning calf pens by hand?

"There's an easier way," says Stan Witzel, farm engineer at the University of Wisconsin.

Cleaning calf pens in the steel dairy barns at the University's East Hill Farm took too much time and labor. So, Witzel had the calf pen partitions cut off at the floor, a double-door cut in the side of the barn, and a tractor with a manure loader brought in.

Now, except for a permanent partition along the feed alley, all calf pen partitions in the steel barn are hung on chains from hooks in the ceiling. The movable partitions are snubbed with a piece of rope to the permanent partition against the opposite wall, holding them steady.

Witzel says 12-inch concrete curbs around the pens hold the manure as it piles up. The partition can be raised on the chains as bedding is added.

When the manure gets deep enough, the movable partitions are swung to one side, the manure loader brought in, and the pens are cleaned with a minimum of time and effort.

Witzel thinks most farmers could fix their calf pens the same way, and save a lot of hard work during the winter.

Poison bait kills mice in woodlot

The surest way to control field mice in forest plantings is to use poisoned baits. Dusting half-inch cubes of apple with zinc phosphide is recommended. This kills both meadow and pine mice.

When pine mice are present, oats treated with zinc phosphide also should be used. Zinc phosphide is not readily obtained, but the county agent can provide information about its purchase.

The principle of bait application is to place one poisoned cube every 100 square feet with poisoned oats in teaspoonful quantities at the same bait spot when there are pine mice. A practical way to place bait is to start from one end of the field and walk in a straight line, placing a bait in active runways and burrows every 10 feet.

On the return trip, space the bait rows 10 feet apart. The bait should be inserted into the grass tunnels or into holes and not openly exposed on the surface.

The baiting procedure outlined is the one recommended by Ernest M. Mills, United States Fish and Wildlife Service, Rutgers University.

SPREADING MANURE on frozen, snow-covered ground carries the risk of heavy loss by surface wash, when rapid thawing begins.

Save fertility in manure

When manure is piled in the winter, add 50 pounds of superphosphate per ton. Manure will hold three times as much ammonia than if left untreated.

by H. J. Snider

IT SEEMS needless to call any farmer's attention to the fact that manure is a very valuable by-product of livestock farming. Although its value is apparent in improving the fertility and texture of soils, there appears to be a lack of understanding of some of the simple means of preventing losses on the farm.

During the winter season when the soil is frozen and probably covered with snow, manure is spread on land in large quantities. It might be hard to convince a farmer that he would save labor by hauling it directly to the river or other stream and dumping it into midstream as that is where most of it will be after the first rain and thaw.

It would be far better to allow the manure to accumulate in a heap in cold weather rather than spread it on frozen ground and still worse, frozen ground covered with snow. Manure in the heap under normal conditions would contain considerable moisture which would likely freeze if the winter temperature would be sufficiently low to prevent fermentation. This would cut down or eliminate the loss of ammonia.

Manure is a very active substance and is also a highly perishable product. It is subject to strong bacterial action and, under certain conditions of moisture and temperature, it changes rapidly.

Fermentation brought about by bacteria in manure causes the loss of ammonia, a compound which contains the valuable nitrogen element. This process begins soon after the material is voided into stable gutters and may continue after manure is plowed under.

Avoid losses . . .

The immediate plowing under of fresh or fermenting manure is the best means of avoiding losses from fermentation.

This immediate plowing under is seldom possible as a busy farmer may start to haul and spread manure on a field several weeks before he starts the plowing. If the spread manure dries out, there may be some loss of ammonia because of the drying. However, there may be sufficient moisture at the surface of the soil during the early springtime to keep the manure moist and prevent drying loss. Spring rains may come and wash the ammonia into the soil, if the surface is not frozen, where it is held for future use by the growing crop.

There are rather inexpensive ways of preventing some of the fermentation losses from manure. Some of these methods have been worked out and tested by Dr. A. R. Midgely at the Vermont Experiment Station.

Use superphosphate . . .

Dr. Midgely recommends the use of superphosphate placed in the stable gutters to help cut down fermentation losses. This also may help cut down drying losses when the manure is spread on the land. If a loafing shed is used for cows, this is an ideal place to spread superphosphate on the manure.

It is recommended that the granular or pellet form of superphosphate be used and that up to 50 pounds be added for each ton of manure. It might be difficult to determine when this proportion of phosphate to manure is arrived at. A little in excess will do no harm and a smaller amount may prove sufficient.

Since a large acreage of our soils are deficient in phosphate, this may be a good means of building up land fertility.

Superphosphate of the 16 to 20 per cent grade has been found to be the most desirable. These lower grades appear to absorb and hold the ammonia better than the 40 to 45 per cent grades.

Strange as it may seem, the mixing of the superphosphate with manure improves the value of the phosphate. This is in addition to preserving the ammonia content of the manure.

The use of superphosphate in stables is favorable in other ways.

1. It lessens stable odors.

2. Absorbs moisture and helps keep the stable dry.

3. Disinfects stable walks and floors. It is not likely to injure the feet and hoofs of the cows.

In addition to these advantages, the manure treated with superphosphate may hold three times as much ammonia as that not treated with it during the fermentation process. It also lessens the loss of ammonia when the manure dries.

The author is professor emeritus, agronomy department, University of Illinois.

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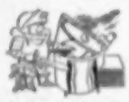

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Handy cement weights to go against that garage door are easy for Norman Lawton, Mass., to make. He mixes cement and small stones in a wooden form. A piece of cable is anchored in the cement for a handle and a piece of rubber hose is placed over the cable to make a soft handle.

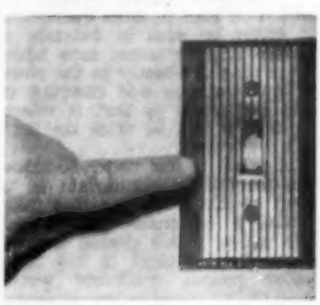
These concrete weights can also be used for extra disc weights.

CHARLES L. STRATTON
New Hampshire

FOUNDRY TUB FEEDER

Howard Clark, on his Maryland dairy farm, has made good use of old foundry tubs picked up at a local junk yard. These tubs are placed in the heifer pasture and are used for feeding grain to the young stock. Normally these tubs can be picked up for scrap metal prices. They are extremely heavy, of course, but certainly cannot be easily overturned.

PAINT LIGHT SWITCH



Fred Kock, Logansport, Ind., puts a spot of white paint over the "on" position of his basement light switch.

A glance shows if light is on.

Indiana WILLIAM SCOTT ALLEN

PORTABLE GRAIN BIN

A grain bin mounted on skids makes bin more useful. It helps cut feeding chores. It is a good idea for renters, too, because it qualifies for government loans and is easily moved over the road by sliding the bin onto an implement trailer.

Illinois C. F. MARLEY

POULTRY

Joe W. Sicer

What we are learning . . . ABOUT VENTILATION

Perfect hen house ventilation has not yet been devised, but some basic principles are fairly well established. Amount of heat and rate of air movement are key factors.

GOOD ventilation can be responsible for more than the evident benefits of dry litter and the absence of objectionable odors. It can be responsible also for decreasing the spread of some respiratory diseases.

This was shown in a recent U.S.D.A. study. Twenty chickens, 9 weeks old, were placed in each of two pens. Half of the chickens in each pen were inoculated in the windpipe with PPLO (pleuropneumonialike organisms). These are the bugs closely tied up with CRD (chronic respiratory disease).

In one pen, the movement of air was so controlled that only ⅓ cubic foot of air was provided per-bird per-minute. In the other pen, 3 cubic feet of air were provided per-bird per-minute.

After four weeks, careful examinations were made of all chickens.

In the pen that had the slow rate of air exchange, the chickens that had **not** been inoculated with PPLO showed definite evidence of having acquired the infection.

The noninoculated group in the pen with the high rate of ventilation showed no evidence of the spread of PPLO.

Ventilation dilutes germs . . .

It would appear the abundance of ventilation in the one pen resulted in diluting infectious material coming from the inoculated birds so that the other birds in the same pen did not succumb to the infection.

If you think back of your own experiences or observations, you probably will find they can be tied in with the findings of this study. The Diagnostic Laboratory at the University of Connecticut, for instance, reports that over a five-year period as the average outside temperatures rose seasonally, the occurrence of respiratory diseases went down, and vice versa.

Heat—ventilation key . . .

How to get the desired rate of ventilation in the winter and at the same time keep the house warm enough is a major problem. Heat is the key in its solution. Insulation is important insofar as it reduces the loss of heat to the outside of the house during cold weather, and helps to keep the heat out in the summer.

Back in the days when we brooded with coal stoves and in portable houses that were uninsulated and often had cracks between the wall boards big enough to see through, there wasn't much of a ventilation problem. The fuel cost per chick was high, but there was enough heat to cause a natural flow of air at a high rate through the cracks and opened windows.

Later, with tighter, insulated buildings, we could get enough brooding heat without burning so much fuel. Often, however, the chicks didn't do so well.

In our efforts to conserve fuel we failed to generate enough heat for adequate ventilation.

An engineer would point out that the 6 cents worth of coal we formerly burned per chick would produce about 40,000 B.t.u. or heat units. Subtracting 16,000 heat units lost through the uninsulated building would still leave 24,000 B.t.u. for ventilation. In the new, insulated building, 2½ cents worth of oil would provide 16,500 B.t.u. The heat loss would be cut to 8,000 but there would be only 8,500 B.t.u. left for ventilation.

Heat is needed to vaporize the moisture in the chicken house. The capacity of a given amount of air to hold moisture is doubled for every 17-degree rise in temperature. When you depend on natural ventilation, the difference in the temperature of the air inside the house and that outside the house creates the chimney effect that moves the air. The bigger the difference, the faster the air movement.

With natural or mechanical ventilation, enough heat makes it possible to keep the birds comfortable and still permit a fast enough change of air, or rate of ventilation, to get the desired dryness in the litter, freedom from odors, and healthful conditions. Don't be penny-wise on fuel economy and pound foolish on healthful conditions.

Problem with layers . . .

With layers, we can go in either one of two directions.

We can forget about trying to retain enough heat to give the birds greatest comfort. We can open the windows and other openings wide enough to get the needed rate of air movement with the heat available. We can hold down the number of birds in the house to the point where the problems of ventilation are also held down. But there are always periods when this way of ventilating results in concern about wet litter, or temperatures too low for best results.

Our other choice is to conserve and even increase the heat available in the laying house until it is enough for the desired rate of ventilation plus comfort.

With layers, heat can come from the bodies of the birds themselves, from the sun, decomposition in the litter, and even from the ground under the house floor.

The most obvious way to increase the heat in a laying house, without putting in a heating system of some kind, is to put in more chickens. This can be done successfully. It makes possible and also multiplies the importance of a high rate of ventilation.

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DAIRY FARM HOME

Fall feasting

The air is crisp and appetites are brisk. Try these hearty ideas for fall get-togethers to please family and friends.

by Marian Pike

PUMPKIN TARTS, with whipped cream, are a delicious treat for fall.

GATHER around the festive table; it's pumpkin pie time! Sniff and admire these elegant tarts; then spoon sweetened whipped cream over the top and enjoy a delightful treat.

If you're buying canned pumpkin, the No. 303 can (2 cups) makes a generous 9-inch pie or 6 tarts; the No. 2½ can (3½ cups) yields 2 pies or 12 tarts.

Pumpkin Tarts

- **2 eggs, slightly beaten**
- **2 cups canned or cooked pumpkin**
- **¾ cup sugar**
- **½ teaspoon salt**
- **1 teaspoon cinnamon**
- **½ teaspoon ginger**
- **¼ teaspoon cloves**
- **1½ cup evaporated milk, top milk, or light cream**
- **6 8-inch unbaked pastry shells.**

Mix ingredients in order given. Pour into tart shells. Bake in a hot oven (425 degrees) for 15 minutes; reduce heat to moderate (350 degrees) and continue baking 25 to 30 minutes, or until a knife inserted in the center comes out clean.

When cooled the tarts may be removed from pans, if desired, for serving. Slivered almonds are a nice touch on top of sweetened whipped cream.

If you'd like to add a gourmet touch to your tarts, sprinkle tops with a thin layer of brown sugar and chopped nuts 10 minutes before baking time is up. Sharp cheese is a good accompaniment to pumpkin pies, or each serving could be topped with a sprinkling of finely-chopped candied ginger or crushed peanut brittle.

Take a look now at the pudding and casserole below. Don't become alarmed when you read the pudding recipe. The batter that you spread in the pan is rather thick; then you sprinkle the brown sugar over and then pour the hot water mixed with chocolate over all. When the pudding is done, you have cake on top, sauce below. Be sure your pan is tall enough; it does bubble a good bit in the baking. If your pan should be a little wider than the 8 inches specified, it may bake in as little as 30 minutes. Test it with a straw and don't overcook.

The casserole is rich and good as is, but for variety you could omit the bacon, use a little less cheese, and stir in a cup of tuna or other cooked fish with the sauce.

When the evenings are crisp and the family gathers around, popcorn is always welcome. Popcorn isn't hard on dieters. A cup of unbuttered popcorn contains only 54 calories, making it ideal for eating in place of sweets and other high-calorie foods many crave. Its natural bulk soothes the appetite, yet does not spoil it for those foods which are needed at mealtime.

Popcorn, for the same reason, makes an ideal between-meal snack for children. In combination with milk, it provides a nutritious treat, much better than soft drinks and candy.

Pop perfect popcorn . . .

The moisture content of the corn is what determines how well the corn will pop. When your home-grown corn is at the right popping stage, seal it up in air-tight jars. When you buy corn at the store in metal or plastic containers, it is fine for popping right away after it is opened. But the unused portion must be sealed up at once, or it will pop imperfectly next time.

In our heated houses, popcorn is more likely to be too dry than too damp. When I put away popcorn from which I've been using, I run a little water over the inside of the cap, shake off the excess, and then cap it up tightly. This extra moisture keeps the corn from drying out and keeps it popping good.

Here are five simple steps for corn popping:

1. Warm the popper, heavy pan, or heavy skillet.
2. Pour in cooking oil to cover the bottom ⅛ inch deep.
3. Let the oil heat, about 3 minutes. Drop in 3 or 4 kernels. When they begin to spin in the hot oil, you are ready.
4. Pour enough kernels in to cover the bottom of the popper.
5. Cover and shake gently. Once the corn is popping hard, it can even be removed from the heat as enough heat will be generated to finish the job, providing you keep the cover on tight. When you hear the last few "pops," empty contents into a large bowl. Pour in melted butter and salt to taste. Serve immediately.

Pop corn is delicious with milk or cider (hot or cold) or as croutons for soups and seafood stews and chowders. Garlic salt or grated cheese can be added to pop corn for flavor variations. **THE END**

Hot fudge pudding

- **1 cup sifted all-purpose flour**
- **½ teaspoon baking soda**
- **½ teaspoon salt**
- **¾ cup sugar**
- **2 tablespoons vinegar, plus milk to make ½ cup**
- **1 ounce bitter chocolate, melted**
- **2 tablespoons butter, melted**
- **1 cup chopped walnuts (optional)**
- **1 cup brown sugar**
- **2 ounces bitter chocolate, melted**
- **1¼ cups boiling water**

Sift flour, baking soda, salt, and sugar together in mixing bowl. Add vinegar and milk, 1 ounce melted chocolate, butter, and nuts. Stir until well blended. Turn into buttered 8-inch square pan, 2 inches deep.

Sprinkle brown sugar over batter. Mix together 2 ounces melted chocolate and boiling water. Pour over batter. Bake at 350 degrees (moderate oven) 40 to 45 minutes. Serve warm with sauce from pan.

Tomato cheese casserole

- **1 7-ounce package macaroni**
- **6 slices bacon**
- **3 tablespoons butter**
- **3 tablespoons flour**
- **1½ teaspoons salt**
- **¼ teaspoon pepper**
- **2 cups milk**
- **2 cups shredded sharp cheese**
- **3 medium tomatoes, sliced**
- **Paprika**

Cook macaroni tender in boiling, salted water. Drain. Fry bacon crisp. Drain, cool, and crumble. Make white sauce of butter, flour, salt, pepper, and milk. Remove from heat. Stir in 1½ cups cheese until melted. Add bacon. Make two layers of macaroni, tomato slices, and sauce in buttered 2-quart baking dish. Garnish with tomato slices. Top with remaining cheese. Sprinkle with paprika. Bake in moderate oven, 350 degrees, until browned, about 30 minutes. Serves 8.

7161. Ho! Ho! Ho! A miniature Santa doll to thrill the tots. He's 12 inches high and easy to make from a man's cotton sock. Pattern and directions for doll and clothes. Price 25 cents.

545. Baby animals for baby hands; takes little fabric to make these toys. Each is just 2 pieces, plus ears. Transfer pattern of 4 cuddle toys about 5 x 6 inches. Paces are in easy stitchery. Price 25 cents.

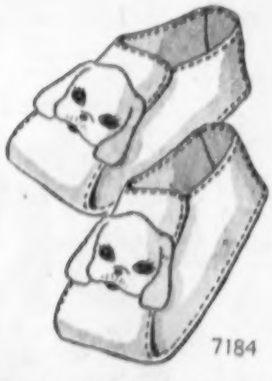
7013. Toaster doll is fun to make. Her full skirt covers toaster and keeps it dustfree. Use scraps to make doll. Embroidery transfer and pattern pieces. Price 25 cents.

7234. Santa gives a warm welcome to all of your friends with this holiday apron that jingles merrily. Transfer of Santa head, applique cap, and apron directions. Price 25 cents.

833. It's easy and quick to crochet this lacy little cape in pineapple pattern. Sizes small, medium, and large are included in pattern. Use 3-ply fingering yarn or mercerized crochet and knitting cotton. Price 25 cents.

7144. Children love these gay little Christmas motifs. Stitch them on pillow tops, bibs, crib covers, or curtains. Transfer of 12 motifs about 3½ x 6 inches. Price 25 cents.

7115

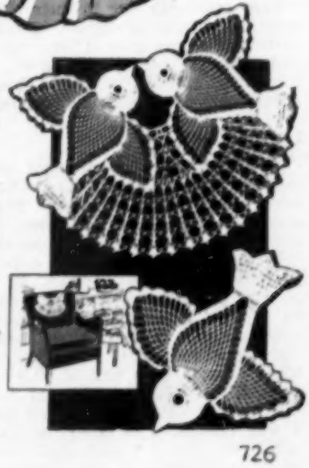


7115. Childhood's favorite prayer is embroidered and beautifully illustrated on 2 nursery pictures. Transfer of each picture 10 x 14 inches. Color charts and directions. Price 25 cents.

527. A Christmas gift she'll enjoy all winter. Jiffy-knit is this warm hat and mitten set; add trim of sequins or pearls. Set requires only 4 ounces of knitting worsted. Chart and directions for sizes 4 to 14 years included. Price 25 cents.

7086. Pretty serving apron in form of a full-blown flower. Make it of remnants in two glowing shades. Embroidery transfer and directions for apron 16 inches long. Price 25 cents.

726. It's easy to crochet this dainty chair-set. Use it as a buffet set, too. Crochet directions for chair back and arm rests are given in No. 30 mercerized cotton. Price 25 cents.



7175. A real playmate for some lucky tot! He's a 32-inch boy doll; wears size 2 boy's clothes. Use flesh-colored fabric to make doll; straw yarn for hair. Pattern for doll only. Directions. Price 25 cents.

694. Boys from more tots to college age! love these horse-head pillows. Make of felt or other plain material. Transfer of two heads and directions. Use straw yarn or rug cotton for mane. Price 25 cents.

7184. Slippers that grow to fit a child's foot. Each new size adjusts with snaps. Soft, comfy, and an ideal gift. Child sizes small 4,5,6; medium 7,8,9,; large 10,11,12 included in pattern. Transfer and directions. Price 25 cents.

683. So many lovely gifts can be made from crocheted squares; 1 square makes a doily, 3 a scarf, 4 a TV cover. Quick, effective, and lovely. Directions for square in No. 30 cotton.

Pattern Nos.	Size

HOARD'S DAIRYMAN, PATTERN DEPT.
Fort Atkinson, Wis.

NO PATTERNS EXCHANGED

$_____for patterns.

NAME_____RFD_____

CITY_____STATE_____

9328. Slimming two-piece fashion for shorter, fuller figures. The classic lines adapt to many fabrics. Printed pattern in half sizes 14½ to 26½. Size 16½ takes 4¼ yards 39-inch fabric. Price 35 cents.

9391. Classic shirtwaist dress is a year 'round favorite. Easy sewing with our printed pattern. Misses' sizes 12 to 20; 40 to 42. Size 16 requires 5 yards 39-inch fabric. Price 35 cents.

4627. Half-size fashion with step-in styling, unusually pretty bodice, and graceful skirt. Printed pattern in sizes 14½ to 24½. Size 16½ takes 4¼ yards 39-inch fabric. Price 35 cents.

9262. Princess jumper with smart companion blouse. Printed pattern in misses' sizes 12 to 20. Size 16 jumper takes 4 yards 39-inch fabric; blouse 2 yards 35-inch. Price 35 cents.

9092. Bridal wardrobe for her favorite dolly is a wonderful Christmas gift. Includes gown, headpiece, veil, bridesmaid's gown and bonnet, bouffant slip, and frilly panties. Printed pattern for dolls 14, 16, 18, 20, 22 inches tall. Yardages given in pattern. Price 35 cents.

598. Simple filet crochet with K stitch sets off the handsome deer design in this chair or buffet set. Use as scarf ends, too. Chairback 12 x 16 inches; armrest 6½ x 12 inches in No. 50 cotton. Complete directions. Price 25 cents.

9249. Jiffy-cut printed pattern. Paper pattern is all in one piece. Pin to fabric; cut entire apron at once. Printed pattern in misses' sizes, small (10, 12), medium (14, 16). All given sizes take 1 yard 35-inch fabric. Price 35 cents.

7382. This cuddly miss is sure to delight a tiny tot. She's easy to make; use a size 12 man's sock for body; straw yarn for hair. Directions for doll; pattern for pajamas. Price 35 cents.

Pattern Nos.	Size

HOARD'S DAIRYMAN, PATTERN DEPT.
Fort Atkinson, Wis.

NO PATTERNS EXCHANGED

$_____ for patterns.

NAME _____ RFD _____

CITY _____ STATE _____

From Day to Day

by Lois J. Hurley

NOW the garden and borders are put to bed. New bulbs are snugly tucked down in the soil under coverings of leaves or straw or branches, depending on what type of covering you use. And, though our backs are scarcely through aching with the efforts of the season just ended, our minds are eagerly picturing the beauties of next spring, when the blossoms will again come forth in the miracle of awakening life.

I took up all the tulips after blooming, sorted them and had about six dozen to replant, not choice bulbs but capable of rather nice blooms. Along with them I put in a border of hyacinths under the birch tree, a group of mixed daffodils and took a flier in lilies.

Aside from a clump of lemon lilies a neighbor gave me some years ago and a couple of madonnas that have not thrived as they should, I have never raised lilies, though their bloom is beautiful and, once established, they are one of the easiest plants to grow. I ordered a mixed collection and put them in as a border where the patio used to be before we tore it out and converted to grass. I can hardly wait for results.

Now as I review the garden of the summer just passed, my biggest thrill lay in a row of nasturtiums that grew so lush and lusty you won't believe it.

I gave up on these delightful, old-fashioned flowers about 15 years ago. They inevitably got covered with sticky lice, withered and died. But, I thought, perhaps the new insecticides and sprays will now control this objection, so last spring I put in two packets of nasturtium seeds along the backyard border.

They took forever coming up. Then, sure enough, the first leaves were lousy. I sprayed the plants and the leaves yellowed and dropped off. I set a day for pulling them up but it rained that day. By the time I got to them, they showed signs of survival, so I let them be.

They forthwith dug in their toes and grew into prodigious plants with leaf stems over a foot long and some of them made almost a three-foot spread! I picked bouquets from them all summer long

The golden years . . .

Yesterday, our church guild entertained the Golden Age Club with dessert and movies. This group, as you probably know, is made up of women in the "declining" years and was started a few years back by the Y.W.C.A. as a service project and is functioning in many cities, under various sponsorships. Golden Agers near me are sponsored by the Women's Civic Council of a city of 80,000.

Having a Golden Ager in my own family (my mother, aged 89) I was interested in observing this group of elderly women and even more interested in the different ways younger women treated them. In too many cases, they talked to them like children, rather than worth-while people who still have ideas of their own.

My well-meaning friends make this mistake with my mother. She enjoys a bit of humoring, but, by and large, she likes to carry on a give-and-take conversation as her mind is still keen.

Too many don't trouble to talk to her, at all. I think this is one of the worst things we do in our contacts with the aged. We ignore them. The thing they crave most is a little continuing attention. So many times they are put in the easiest chair in the best location in the room, solicitously asked if they're too hot or too cold, if they can be served whatever is to eat or do they wish something special, then forgotten!

A friend of mine gave a luncheon for my mother last winter. She greeted her, tended tenderly to her wants, and that was all. The guests didn't talk to her, either, so it was only natural for Mamma to wonder, later, just why this friend had gone to all the trouble to plan an entertainment for her, when she might just as well have stayed at home!

My friends are well-meaning people; it's just that an old lady doesn't seem of any importance, other than to be greeted and made some remark to, as you would notice a child or a pet. Actually, if you take the time to really sit down and visit with old people you find it most rewarding. Their comments are sharp and sage and they have delightfully humorous insights into situations that you will find refreshing.

Run in on the old folks you know and give them an hour or a half-hour of your time, as often as you can. Talk to them as equals, without condescension or secret amusement, which may not be as secret as you think. They love to be laughed **with**, not **at**!

A dairy plea . . .

The dairy industry constantly cries the blues about sales volume and the dairy farmer wonders why the advertising agencies he supports don't do more for him.

I've long said, as you know, that I think the merchandising and packaging of butter, for instance, misses several good bets on the path to consumer popularity and to it I want to add sour cream.

Never a week goes by that I don't read luscious recipes calling for the use of sour cream, usually as a shortening or enriching ingredient. Can I go to the dairy counters of any store near me and buy honest-to-goodness sour cream that you can successfully use in cakes and cookies? I cannot. All I can purchase is sieved and whipped cottage cheese, that sells under the name of sour cream but that results in a total lack of results, baking-wise.

True, I can buy whipping cream at a fancy price and allow it to sour, but I don't think I should have to do that. Why can't the dairies use some of their cream surplus, which they surely have, along with surpluses in every other dairy product, to make honest-to-goodness sour cream, which they might package and label **"soured cream"** and which the homemaker could buy and use with confidence in baking and cooking?"

Continue to market the other product; it's delicious on baked potatoes, seasoned with chives, onion salt, or just a whiff of garlic. You can stir it into veal and beef as a pretty acceptable substitute for the real thing, in the making of fancy dishes such as scallopine and strogonof and it has its place in creamy salad dressings and TV dips. But, please, can't we have the honest product, too?

. . . STATEMENT . . .
required by the Act of August 24, 1912, as amended by the Acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233), showing the ownership, management, and circulation

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W. D. Hoard, Jr., Business Manager.

Sworn to and subscribed before me this 27th day of September, 1957.
[SEAL.] Wesley Wetzel, Notary Public.
(My commission expires May 24, 1959.)

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Cheese for every occasion

THERE are varieties of cheese for every taste, for each meal, and for between-meal snacks in today's showcases, says Mildred Smith, University of Connecticut, consumer education specialist.

Cheese is a protein-rich food which also has in it many of the vitamins and minerals of milk. Cheese is versatile, too. Various kinds can be served as is, used in salads, or be cooked in combination with many other foods.

Most kinds of cheese, which number up in the hundreds, are named for the towns or localities where they were first made. Cheddar, Roquefort, Limburg, and Gruyere are villages famous for their cheese.

While cheese can be classified in various ways, one simple classification is by texture: Soft, semi-soft, hard, and very hard.

Cottage cheese is a familiar example of soft cheese. It is an unripened cheese made from skim milk. Nowadays it finds its way to the breakfast table as well as being popular with other meals. Cream cheese and domestic Neufchatel are other soft unripened kinds. The Camembert type of cheese is in the soft classification but is a ripened cheese.

Roquefort and Blue cheese are semi-soft varieties which can be used in salads, in salad dressing, or eaten with fruit or crackers. Limburger and Brick are in the semi-soft category, too.

Cheddar the most popular . . .

Cheddar, or American, is a hard type of cheese made from whole milk. Cheddar and Cheddar-type cheese account for three-fourths of all the cheese made in this country. Most of the Cheddar made is "natural" cheese, although "process" is a popular variation. Swiss and Gruyere are other varieties of hard cheese.

The very hard kinds of cheese are usually grated before using. Parmesan and Romano are two varieties of very hard cheese.

Most kinds of cheese were first made in foreign countries. However, American cheese makers are now making many of the foreign varieties. You will find domestic Swiss, Blue, Roquefort, Limburger, and scores of others on the market, and usually at lower prices than imported cheese.

Cheddar and cottage cheese are both reasonably priced and most popular among the kinds of cheese. Many families like to use the less familiar kinds, however, especially during the holiday season.

Cheese in the freezer?

U. S. Department of Agriculture specialists say that cottage cheese may be kept in the freezer if closely packaged in moisture-vapor-proof containers, though there may be some water separation on thawing. Freezing is apt to spoil the smooth texture of Cheddar, Swiss, and Italian cheeses. The kitchen refrigerator is the best place to keep cheese, although it still should be packaged in moisture-vapor-proof containers.

Teacher: "Willie, if James gave you a dog, and David gave you a dog, how many would you have?"
Willie: "Four."
Teacher: "Now Willie, think hard. Would you have four dogs if James gave you one and David gave you one?"
Willie: "Yep, I already got two dogs."

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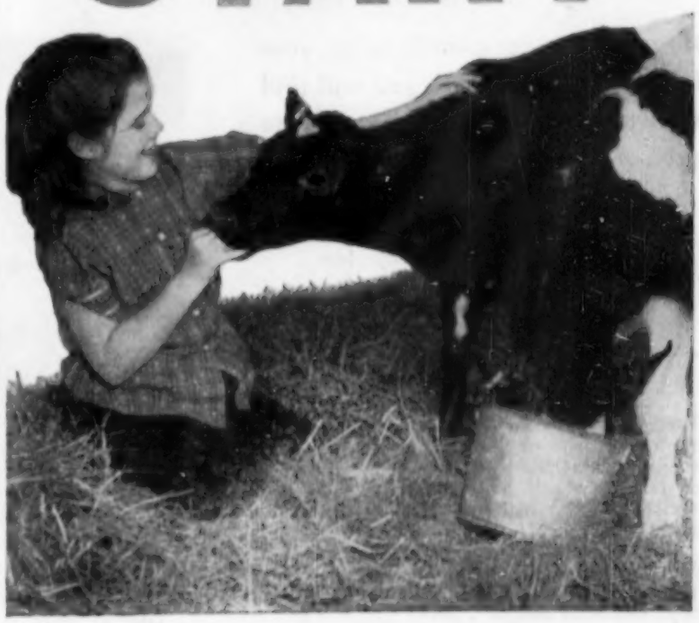

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YOUNG DAIRYMEN — *Careers in agriculture* — No. 19

Extension dairyman . . . teacher and trouble shooter

If you wish to contribute to your fellow man, I am sure you will find satisfaction in helping farmers to greater profits and a better life.

by Raymond Albrectsen

THE AUTHOR is training a group of young men in the basic points of judging and type appraising a dairy cow. This is only one of his many duties as an extension dairyman.

WHAT are you going to do when you graduate from high school?" How often have you heard that question? There is always an answer, be it "I dunno" or "Get a job" or "I'm going to college" or possibly "Sign up with Uncle Sam." Sooner or later you will have to decide what you would like to do with your life, and that decision isn't easy.

You ought to make it yourself even though you do change your ideas as time goes on. This decision is a difficult one because most boys just can't sample a dozen different kinds of businesses before they finally decide which one they want to follow. The fellow is very fortunate who knows early in life what it is he would rather do than anything else.

I was asked about my job as an extension dairyman with the idea of telling you about this kind of work and what it has to offer. Frankly, when I graduated from high school back in the '20's, I thought I wanted to be an engineer. Most fellows do! I applied for entrance in an electrical engineering college, particularly because a new-fangled thing called "radio" was coming along. However, I was advised that there wasn't much future in radio, so that industry was spared my fumbling around with it. Looking back, it's funny how much a passing comment or minor incident determine one's life work.

Majored in animal husbandry . . .

Having been raised on a dairy farm in New York state, I eventually found myself in the college of agriculture at Cornell as a student majoring in animal husbandry courses. I was not specifically training for extension work at that time. Several years after graduation with a Master's degree, I came back on the staff of the animal husbandry department as an extension dairyman. My education really began then!

Extension work is not boresome. It is not the same routine day after day. New problems, new methods, and new techniques are constantly coming up and it is the extension specialist's job to take research findings to dairymen and to bring dairymen's problems to the research workers who try to find the answers.

The hours? You just don't count them. There is no 40-hour week nor clock to punch. You may spend all day in the office and have a night meeting lasting until midnight. You may have a series of meetings or farm visits that take you away all week. You answer your mail weekends. You can't do extension work in dairying entirely from an office, you know. You have a real excuse to get out-of-doors. A farm-reared boy appreciates that part of this job better than anyone else.

Make your own schedule . . .

Does this sound pretty rugged? Well, it is and still it isn't. As an extension specialist you will have considerable freedom to write your own ticket within the established policies of the college for which you are working. You can make some adjustments in your work load so that you can enjoy life, too. Summertime is a slack period for an extension dairyman and what time is better for doing a bit of pondering and some fishing or vacationing.

The question of the pay a job offers is always uppermost in the mind of the person training for a job. The extension dairyman is paid as well as any other branch of the extension service. He may earn $5,000 to $9,000 and more per year, depending on his experience, the reputation he has developed, the responsibilities he is carrying, and, to some extent, his location.

An extension dairyman can work up to becoming a project leader. He may advance to regional and national extension positions if he becomes qualified for these positions of responsibilities. Many experienced extension dairymen have gone into foreign services of our government.

The security that may be expected in a particular job is also of concern. An extension dairyman will need to establish "tenure" or a degree of permanency through good work and service. Once he has established tenure, he can usually count on a steady job. There is no absolute security because, after all, you do have to earn your salary.

In addition to tenure, you probably will be in either a state or federal retirement system that will build up a fund that will permit retirement after 25 to 30 years of service. There also may be some very favorable insurance features worked into the retirement plan.

Helps dairy farmers . . .

Well, just what does an extension dairyman do? Basically, he is a teacher and a trouble shooter. He tries to help dairymen to help themselves and here are some of the things he may do.

1. **Organize, promote, and supervise records.** This means working with Dairy Herd Improvement Cooperatives, central testing laboratories, and the training and supervision of supervisors. He will promote Owner-Sampler testing and Weigh-A-Day-A-Month records. He may also be assigned the supervision of Herd Improvement Registry testing programs of the several dairy breed associations. Also the Advanced Registry testing would come under his supervision.

The use of electronic data processing machines in calculating and interpreting dairy production records is a rapidly-growing development which is very interesting and challenging. This is a big and a very responsible assignment because of the great reliance placed on records for breed improvement and efficient production. This job is so big that you need to organize your dairymen to do part of the work and this calls for a lot of skill, tact, and perserverance. There won't be many dull moments in this area of dairy extension!

2. **Organize and develop breeding programs.**

The author is an extension dairyman, Cornell University, New York.

Artificial breeding cooperatives were and still are a responsibility of the extension dairyman. Under his guidance artificial breeding has grown to a giant industry but there still are many problems that are unanswered. The individual breeder and dairyman still need and want information on the development of their own herds.

Sire selection is by no means a cinch as the production records of daughters of both artificial and natural service sires tell us. There is a tremendous job of educating dairymen in the whole complex problem of breeding more efficient cattle. Type studies, as well as production data, are being made by extension specialists to get information as to how to breed good, useful cows. Nobody knows just how to do this. You may be the one to unlock the secret.

3. **Feeding and management programs.** Extension dairymen know that here is a great area in which much needs to be done to encourage greater use of pastures, high-quality hay, and silage to lower costs of milk production.

Herd management is often a bottleneck in obtaining good efficiency and helpful suggestions and ideas are needed. This subject is particularly intriguing since every herd situation is different. If you like to tackle individual situations, here is a challenge.

4. **Herd health.** There is no more important job for an extension dairyman than to develop a strong herd health program, not only for the benefit of the farmer, but also for the general public. With practically all cows being machine milked, there is still much to be done to make this operation efficient and healthful for the cows and the dairymen.

5. **4-H club and rural youth program.** Here you may feel quite at home and we hope you have had firsthand experience with the extension dairyman working in this field. There is no activity of the extension man that can have a greater influence on the quality of leadership of the dairy industry of tomorrow than working with you young people.

It isn't all just showing cattle and taking part in judging contests, but a general training in good dairy husbandry practices. The extension dairyman working in this area will have the opportunity to enlarge present programs and develop new activities.

6. **Professional improvement.** You must grow with your job. New experiences help in this growth. You will find that there were some courses that you didn't take in college that you need very much. Arrangements can usually be made to do graduate study.

You will want to belong to the various scientific societies that are important in the dairy field. You will serve on planning committees in your college and state and possibly on a national level. You will take part in training schools of various kinds. You will do research on topics of special interest to you. You will present papers at national conferences.

You will meet and get to know dozens of co-workers in dairy extension throughout the United States and Canada. Your contacts with county agricultural agents will be stimulating and help you better understand local situations.

If you have been intrigued by this rather general outline of opportunities in dairy husbandry extension, you may want to know how to train yourself for such work. First of all, you need to like dairy cows and dairy cow farming.

Next, get a good college entrance course in high school, including mathematics, social sciences, a language or two, **including English!** Be a good student. Then, apply to the agricultural college of your preference. After acceptance, tell your faculty advisor what you have in mind. Do not be too surprised if he suggests a year or two of courses with relatively little dairying. You will have time enought in the last two years for specialization.

You also may be perturbed if you are urged to take at least a year of graduate study at a different college. As things are now, **this will help you get a good job,** since most colleges are looking for graduates with at least a Master's degree.

Five years of college is a long time from your point of view right now, but the years will go by rapidly. You will find that your college years will be some of the most enjoyable years of your life.

The final touch to this picture of extension dairyman as a career is perhaps the most important element of all. It is you and your personality. Can you express yourself clearly and convincingly to others? Do you think you could get a "bang" out of seeing some other fellow take your suggestions and make a success?

Do you realize that changing people is a slow process and that you must have perseverance and patience? You would be a salesman of ideas and you know most people do not grab new ideas immediately. Also, you should realize that you will have to face the consequences of your advice and suggestions. This means you must know your stuff.

It goes without saying you must be friendly and courteous. Extension is no place for a selfish person. Oddly enough, the more you give as an extension specialist, the greater the prestige and regard you gain from people you work with, and such gain is priceless.

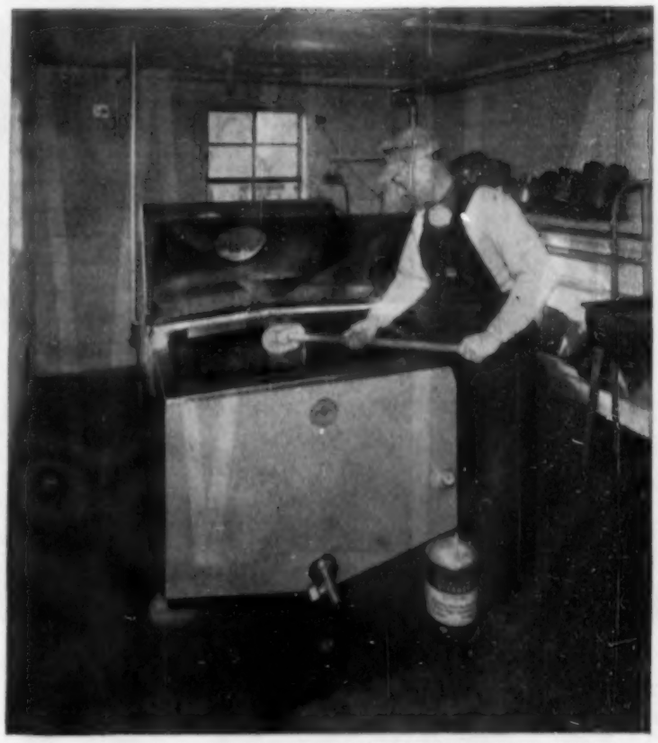
Let's just conclude these several paragraphs with the following thoughts. If you like dairying, and you feel you want to contribute something of value to this great industry, then I am sure it would be satisfying to you to work with dairymen and their families to help them be happier people.

If you would have a feeling of pride in belonging to the extension service of your state college and nation and if you can be humble enough to recognize the other fellow's point of view and beliefs, then you may become one of the leading extension dairymen of the next decade or two.

If this should be your choice, you may be assured that there will be many a helping hand offered to you as you progress in your training and as you start your career as an extension dairyman. **THE END**

BARNEY FARMLAN

"Think of it as helping the soil, not as gassing the neighbors."



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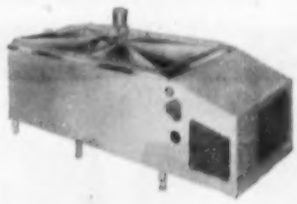

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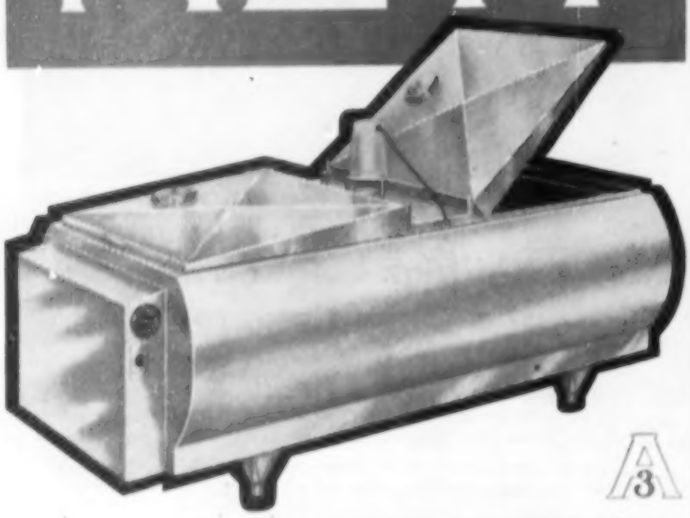

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Pull brush with tractor

by Charles L. Stratton

PULLING brush is easy for dairyman Stelmar Rich of Penobscot County, Maine. He designed an automatic brush puller that attaches to a tractor drawbar (preferably attaching to hydraulic lift) with a couple of bolts.

The brush puller is entirely automatic and the operator need only drive the tractor. A tractor equipped with a brush puller is backed up to the brush, tree, or bush and it automatically hooks on. It will take anything up to 5½ inches in diameter.

As the tractor backs up to the trunk, the tip of the puller slips around the trunk and the jaws close securely. As the tractor moves forward the tree comes out by the roots. (When attached to hydraulic lift, tree is pulled up and outward as tractor moves forward.)

Tree is automatically released when tractor backs up a foot or two. This puller will lay brush in piles without any effort on the operator's part.

THE PULLER JAWS are clamped around base of tree before it is pulled. The operator doesn't leave tractor seat during the operation.

TRACTOR BRUSH PULLER is backed up to tree and jaws hooked around base. Tree is pulled and when tractor is backed, jaws open.

Answers to "What's your dairy I. Q.?" quiz (page 1035)

Here are the expert's answers. Consider yourself a "dirt farmer" for 10-12 right; a "city farmer" for 7-9; and a "city slicker" for 6 or fewer.

1. (c) Purdue University research says three or more years. See your March 25, 1957 issue of Hoard's Dairyman, page 308, where Professor Barber of Purdue discussed this.
2. (a) 100 pounds of milk in 1956 would buy 6 per cent more feed than in 1955, 14 per cent more than in 1954, and 7 per cent more than average from 1953-52 according to the U.S.D.A.
3. (d) Vermont leads in this respect, getting 69.1 per cent of its 1955 total cash farm receipts from dairy products, to say nothing of an estimated 5 per cent more from sales of dairy animals. Dairying is important, of course, in Wisconsin and New York, but so are some other farm enterprises. New York received 45.7 per cent; Wisconsin, 52.1 per cent; and Wyoming, 4.8 per cent from dairy products.
4. (a) This varies widely with different farms but in farm planning 110 hours is a good guide. However many studies have shown that good labor habits should allow you to get this down to 50-60.
5. (b) The labor shortage would tend to eliminate (c) and (d) and the poor land would eliminate (a).
6. (a) We usually feed our calves a little over three billion pounds, or less than 3 per cent of our marketed production.
7. (b) Department of Commerce studies showed 53 per cent of our farmers had TV in 1956. In 1950, 3 per cent had it. The 1955 census suggested the percentage may be even higher on dairy farms.
8. (a) An Indiana cooperative was selling such a strainer to their patrons for $19.95 early this year.
9. (a) The 1955 Census found 73.1 per cent to have milking machines.
10. (d) Dr. H. A. Herman, writing in the May 10, 1957 issue of Hoard's Dairyman, told how you can increase this percentage.
11. (a)
12. (b) A good rule of thumb here is to figure 5 per cent of your initial investment for additional fixed costs of repairs, insurance, taxes, and interest on the unamortized principal. The depreciation is 10 per cent, so our annual use cost of this labor-saver will be 15 per cent of our investment. This amount then must not be more than our labor saving. Fifteen per cent of $2,000 will just give us this cost of $300. So, $2,000 is the best answer.

Arthritic farmers

Today's Health magazine reports that more farmers are affected by arthritis than any other occupational group, perhaps because of exposure to weather and long physical labor with little relaxation. This was reported by the Arthritis and Rheumatism Foundation.

Some 23 per cent of farmers have arthritis pains. As tips to farmers to lessen the risk, the Foundation advises:

1. Don't do more than you must.
2. Get enough rest.
3. Stop for breathers several times daily.
4. Warm up with simple exercises before a heavy day's work.
5. Begin with the lightest chores.
6. Try not to worry and have regular medical checkups.

SWINE

Let's be choosy

It pays dividends to spend time in selecting hogs for the show. Here are the important points to consider.

by Fred J. Giesler

IT TAKES years of experience to make a successful showman. But, all the experience in the world will not spell success unless we are willing to learn and, above all, have a love for livestock.

Junior members who show livestock have the opportunity at a young age, to learn the fundamentals of profitable swine production. At the many shows, they become acquainted with older showmen and gain from their rich experiences. To succeed, they can learn by doing; and as they learn and grow, their program can expand into a full scale operation.

The show ring is a place where we can all gain knowledge, learn sportsmanship, derive pleasure, and get satisfaction. All this makes us better livestock producers.

Success in the show ring generally depends on natural ability, plus what might be called good livestock sense. Naturally, a good hog showman needs to know some things he wouldn't have to know if he were showing some other class of livestock.

Know swine type . . .

Success in the show ring is too often measured solely by the number of ribbons won at the local, county, or state shows. Success, however, should also be measured by the profit or loss as determined by the record on expense and income. In either case, success will depend in part on the type of animal shown.

The type of animal shown may not always be the most profitable for the feed lot. "Show ring type" may change from time to time and from judge to judge. Thus "show ring champions" have sometimes become a matter of chance.

In recent years, however, with the coming of the so-called "meat-type" hog, many characteristics that go to make up good type have become relatively standard from year to year.

A widespread educational program has brought about more uniformity in the type of animals which are selected as champions by different judges at different shows. This makes it possible for a good livestock man to always have good hogs that make a satisfactory display in the show ring.

A good type animal comes as close to the ideal as possible. The muscular or meat-type hog is in greatest demand. This hog is well muscled and may vary in carcass length from 29 to 31 inches. It will make good gains and top the market at 200 to 225 pounds when 5 to 6 months of age.

We should look for a hog that has as many of the following characteristics as possible:

The head. Both females and males, outside of refinement and femininity for the female, and masculinity about the head for the male, should have the following characteristics: Short, wide heads with trim jowls; ears set wide apart and moderate in size; and short necks.

Body conformation. Meat-type hogs should be of medium length and have relatively thick bodies and be uniformly deep in the side. There should be good width between the forelegs with good spring of rib, and the hind legs should be well set out on the corner.

A high tail setting is a good indication of a full deep ham, which should carry well down toward the shank. The sides of the body should be free from wrinkles.

On gilts we like to see two rows of normal teats, at least six in each row. The boar's testicles should be well developed, balanced, and hang low.

Feet and legs. This characteristic is primarily important for breeding classes: Legs set out on the corners, legs and pasterns straight and strong, and toes held close together.

Often, producers who show hogs make the mistake of placing too much emphasis on type and too little on production performance.

To get good production, we must select for litter size, weight of litter at weaning, and daily rate of gain. (Recently a great deal of emphasis is being placed on feed conversion).

The commercial producer is interested in pounds of quality pork. Therefore, purebred breeders who plan on selling breeding stock will help themselves if they can supply production records as well as show ring records.

Plan farrowing dates . . .

Farrowing dates of pigs, intended for show, should be planned according to the dates of the show. To make the best showing, barrows and breeding stock should make rapid daily gains from the day they are born until they walk into the ring.

In the past, March 15 and September 1 have served as base dates to determine the age classification of hogs. More recently, for hogs less than a year old, some shows have also used January 1, February 1, and August 1 as base dates for new classifications. Pigs born between January 1 or February 1 and March 15 can be shown as senior spring pigs at many of the leading swine shows.

Because of variations in base dates and group classes, show catalogs should be studied carefully before breeding time.

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Authorities insist there's a crying need for dairymen to get rid of the unsanitary rag and the bucket of soiled water employed on many farms for udder washing. This sanitizing job can be done best with the new, sturdy, patented VINELAB UDDER WASHER. Udder washing is done quickly, and economically with this revolutionary device.

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ARTIFICIAL BREEDING

Maryland-West Virginia studs merge

Move paves way for better sires and more effective service. Will reduce overhead and costs involved in furnishing quality semen.

by H. A. Herman

REALIZING that closely adjoining areas are being serviced, and semen going to waste in both, the Maryland and West Virginia Cooperative Breeding Associations are merging their bull studs. The merging will move as rapidly as possible. All major problems concerning uniting the two studs have been resolved.

The directors and the patrons of the two cooperatives are in agreement that this move can result in the use of better-production-type-transmitting sires. It also should result in a more effective use of manpower and a fuller utilization of semen. The end result should be better service and reduced cost in furnishing semen from top-quality sires.

It will not necessarily mean a reduction in breeding fees to patrons because both studs have felt the pinch of mounting operational costs and a volume of cows bred by each below the maximum for the number of top-quality and high-priced sires maintained.

Volume important . . .

It is a tribute to the artificial breeding business that, as a free enterprise endeavor, it is giving excellent service with no material increase in cost to the farmer. Much of the answer is volume of business. A small bull stud has trouble maintaining top-quality sires, employing capable personnel, and still giving standard service at a highly competitive price.

Consolidation of closely located bull studs is a part of the answer to volume. It is not the only solution but it may be one of the most basic in the years ahead.

The chief advantages which the Maryland and West Virginia cooperatives will derive from this merger have been summed up by their directors, as follows:

1. Sires will be fully utilized. Fewer sires will be in use for the same number of cows serviced by the two organizations.

2. More money will be available for sire purchase and the best sires in America can be obtained.

3. Carefully selected young sires will be sampled and held in "bachelor quarters" awaiting proving. The West Virginia cooperative's barns and headquarters will be used for this purpose.

4. Personnel will be more specialized and thus be able to do a more efficient job than if forced to devote time to many tasks.

5. Laboratory space, semen processing and shipping, and record keeping will be done at a central headquarters (College Park, Md.) thus eliminating much duplication and cost.

6. There will be one general manager instead of two, and the entire administration and field service costs will be reduced.

7. Plans for expansion of the service, as well as giving better service, can be planned and financed with savings in operation.

8. Competition can be met without seriously curtailing operating funds as a greater operating margin will be provided.

Still a true co-op . . .

A merger of this type doesn't mean the two organizations involved lose their identity nor that dairy farmers lose control. Only the bull stud is being merged. Its operation and policy will be controlled by a board of managers, four from the West Virginia A.B.C. and four from the Maryland A.B.C.

W. L. Campbell, who, for many years, has served the West Virginia A.B.C. will be the new general manager.

A 10-man sire committee, five appointed by the West Virginia group and five by the Maryland group, will be set up for each breed. These 10-man committees will choose from their numbers an executive committee of four with power to act.

As a starting step in activities, the sire committees will screen the bulls of their respective breeds now available in the Maryland and West Virginia studs and determine those to keep and those to eliminate.

Meeting price squeeze . . .

Since the artificial breeding program started labor has more than doubled its income, travel costs have nearly doubled, automobiles cost nearly three times as much, postage rates have increased materially — even milk has nearly doubled in price per hundred — but the breeding fee has remained practically constant because:

1. The number of cows serviced per sire annually has risen from 228 in 1939 to 2,300 in 1957.

2. Technicians are inseminating more cows per man per year, which results in their making reasonable salaries even with the increased cost of travel.

Thus, a bull stud merger is one method of reducing sire costs per cow. And it may free personnel to aid in greater volume of work by technicians. Merging is one plan which industry uses to solve its problems in free enterprise.

SPECIAL OPPORTUNITIES

— Where Buyer and Seller Meet —

The rate for advertising in this department is 30 cents per word per insertion, except for "help wanted" and "position wanted" advertising which is only 20 cents per word per insertion. Count address. "J. W. Foley, Route 13, Green Bay, Minnesota," is considered as eight words. Blind advertisements must be signed: "BOX ##, care Hoard's Dairyman, Fort Atkinson, Wisconsin" and count as 8 additional words. Count each initial or group of figures as a word. SEND CASH OR CHECK WITH ORDER. Copy must reach us four weeks ahead of date of issue. NEW ADVERTISERS MUST FURNISH REFERENCES. Send order to HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin. Different rate for Livestock Display advertising.

STOCKMEN'S SUPPLIES

ARTIFICIAL breeding equipment. Largest, most complete line. Write for free catalog. NASCO, Fort Atkinson, Wisconsin. 1-*

MASTITIS TESTERS. Send for free sample and literature. DAIRY EQUIPMENT COMPANY OF OHIO, INC., Pataskala, Ohio. 3-*

$1 INVESTMENT shows you how to save up to $12 a cow a year. Get Dairymen Tested Chow-Chart. Do away with careless guesswork in feed measuring. Durable plastic frame 9" x 5"—aluminum clamp fits any stanchion pipe. Front holds changeable printed card for production and breeding data. Back, facing feed alley, has blank for chalking correct grain measures—21 or more Chow-Charts 75c each—you need one for each cow—Send $1 for sample. Write CHOW-CHART, Box 742C, Bath, N. Y. 11-*

HORN WEIGHTS. Made in 4 sizes ½ lb., 1 lb., 1½ lb., and 2 lbs. Tattoo markers $5.25 postpaid, includes set of numbers, bottle of ink, and full directions. We also carry complete line of ear tags, neck chains, veterinary instruments, supplies, serums, remedies; in fact, everything for the stockman. Write for free catalog. BREEDERS SUPPLY CO., Council Bluffs, Iowa. 24-*

COLIC Drops, Horse Conditioner and Worm Powder, Cow Tonic Powder, etc. Complete list and Cattle Handbook free. Ask your dealer or write Dr. A. C. DANIELS, INC., Marblehead, Mass. Est. 1878. 14-spl

NEW CALF FEEDER. Nurs-a-calf comes closest to Nature's way—Durable soft plastic bag, scientifically designed nipple. Calves can be weaned at 3 days, marketed 14 days sooner, 30% heavier. Eliminates scours, bloating. Hangs anywhere at proper height. Easy to clean. Thousands in use. Guaranteed. Ask your dealer, or write R. L. KUSS & CO., Dept. 1, Findlay, Ohio.

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DAISY CATTLE MARKERS, solid brass tag and brass-plated chain for horns or neck. Write for free catalog. GOLDEN ARROW FARMS, Dept. C, Huntington, Indiana. 10-*

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LEARN AUCTIONEERING, terms, soon. Free catalog. REISCH AUCTION SCHOOL, Mason City, Iowa. 23-*

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COW STALLS, pens, steel windows, hay carriers, steel fence post, post pullers. Immediate shipments. STANDARD EQUIPMENT, INC., Bel Air, Maryland. 18-*

DEPRESSION PRICES. We sell cheap. Save 75% off—new and used tractor parts—crawlers and wheel tractors—160 makes and models—1957 catalog ready—send 25 cents refundable. SURPLUS TRACTOR PARTS CORPORATION, Fargo, North Dakota. 18-4

USED JOHN DEERE #45 combine with #10 corn attachment and 10 ft. platform. Several used 4 and 5 bottom plows. KING EQUIPMENT COMPANY, Stoughton, Wisconsin.

DAIRY EQUIPMENT

FOR SALE—Solar 550 gallon bulk tank, 5 horsepower compressor, 70 OAKS FARM, Route 3, Lake Geneva, Wisconsin.

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GRADED DAIRY ALFALFA, clover, other top grades hay. Quality, weights guaranteed. ART CALLARI HAY CO., Upper Sandusky, O. 16-*

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PHOSPHATE for less—unitg Attco Brand finest-ground, natural Rock Phosphate. Non-acid. Quick results. One application keeps soil phosphorus-rich for years. Write or phone for prices in carlots, trucklots, or "spreading service." Dept. HD, ROBIN JONES Phosphate Company, 204-23rd Ave. N., Nashville, Tennessee. Phone Cypress 8-8947—established 1902. 19-12

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SILO UNLOADERS, P & D silo unloaders and auger bunk feeders, feeds 6 to 9 tons an hour. Hard packed or frozen silage no problem. Satisfactory work guaranteed or money back. Also plastic silo and stock covers. P & D SALES CO., Plainfield, Ill. 18-*

SILOS

1-MODEL GU25S HD James-Leach silo unloader still in crate—$800 COD (List price $1355.) DURAND SERVICE & EQUIPMENT COMPANY, Durand, Illinois, phone 106. 19-2

POSITIONS WANTED

EXPERIENCED MANAGER, wishes position on progressive purebred Holstein establishment in Midwest. Knows showing, bloodlines, feeding and general farming. Age 33, married, 2 daughters. No liquor. Protestant. By Dec. 1. Top References. ANDREW CLAWSON, West Chester, Ohio.

AVAILABLE IMMEDIATELY AS FARM MANager, located in New England, 10 years at present job on 650-acre farm. 48 years old, married, 1 child. Experienced in all phases-breeding, feeding, record keeping. College, 2 years. No drinking. Please write complete details in first letter, BOX 975, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

A HERDSMAN or an assistant herdman's job. I am 35 years old, married, have four children. Have operated my own dairy farm for the past 15 years, both Holsteins and Guernseys. The last year my herd was on DHIA it averaged 452 pounds fat. I'm interested only in a job that has future advancement. Can furnish the very best of references, and positively would want to see the farm in advance. VIRGIL PEHLE, Berger, Missouri.

WORKING FARM MANAGER, well versed in production, feeding, management and marketing of dairy cattle, beef cattle and hogs, also grain and grass farming, soil and water conservation, the operation and maintenance of all farm machinery. Well qualified to handle the largest of livestock, grain, or grass farming operations. Can specialize in anyone of these but would prefer a large diversified unit or units. Best of references. PAUL GEADELMANN, Bennett, Iowa.

EMPLOYED DAIRY FIELDMAN desires similar position in Southland. Married, 35, farm background. D.H.I.A. and artificial insemination experience. Reference from present employer, county agent, etc. BOX 963, Care Hoard's Dairyman, Fort Atkinson, Wis. 19-2

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ALABAMA Blackbelt cloverland dairies, no snows, twelve months grazing, $6.35 milk, write us your requirements. ERNEST F. RANDALL, Realtor, Box 566, Selma, Ala. 11-*

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NORTH CAROLINA DAIRY FARM; 400 acres; pipe line milking parlor; aluminum loafing barn; a $20,000. modern home; registered Brown Swiss and Grade Holsteins; purchase of herd optional; $6.56 market. Very poor health of owner requires early sale. J. A. BAUER, Route 3, Wake Forest, North Carolina. 20-2

WISCONSIN FARMS; located in Walworth County, the Nations' leading dairy area. Send for free catalogue. THORNTON REALTY CORP., Elkhorn, Wisconsin. 23-*

LARGE SELECTION outstanding farms, 40 to 500 acres, write for description. WM. McSHERRY, Mt. Horeb, Wisconsin, Smith Johanning Inc. 18-3

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SOUTH CAROLINA DAIRY FARM, cattle graze winter-summer. 148 acres level, highly productive soil. Thriving fescue, lespedeza, all fenced. Creek. Paved road. 6 room house. Silo. Equipment shed. Cattle barn. Milk barn, cooler, milkers, compressor. $25,000. Down payment $10,000. WILLIAMS REAL ESTATE, BOX 562, Rock Hill, S. C.

ONLY $5000. DOWN takes beautiful all-modern home on 233 acre farm. Other good buildings. Near good fishing lakes. Only $64.58 per acre or $15,000. Favorable terms. BAKER LAND & TITLE COMPANY, Land Specialists since 1874, St. Croix Falls, Wisconsin.

GEORGIA OPERATING GRADE A dairy farm for sale, 264 acres. Good house with bath. Two tenant houses. 20 stanchion barn. On paved road 2 miles north of county seat, 18 miles from State College of Agriculture. 60 acres winter grazing up and growing. 25 cows in herd. 14 heifers, 65,000 feet growing timber. $50,000 for above including all growing crops and feed on hand. EDWARD CARTER, Route 1, Crawford, Georgia.

GRADE "A" DAIRY FARM. Low cost production in famous Willamette Valley, Oregon. 50 Holstein cows, young stock, equipment, quota. $18,000 income. Ask for particulars. $49,000. Terms. WILLAMETTE VALLEY REALTY, Box 267-H, Corvallis, Oregon. 20-2

32-HEAD MILK HERD. Operating 300-acre Tennessee Grade A dairy, $35,000 including 20 milk cows, 11 heifers, registered bull, 2 tractors, milking machines, all farm machinery and small tools! 180 acres tillable, 10 wooded, 140 now in pasture, 5 ponds, year-round creek. On paved state highway, 3 miles town. Good 5-room home. Three large barns. Grade A milk parlor, silo, poultry house, few other buildings. Deserves a place on your inspection list soon for $35,000. Free winter catalog, bargains coast to coast! UNITED FARM AGENCY, 1504-HD Conway Bldg., Chicago 4, Illinois.

BEAUTIFUL. Blackbelt Farms. All sizes. WINSLETT REALTY COMPANY, Marion, Alabama. 12-spl

FARMS FOR SALE

HALF SECTION farm about 19 miles south of St. Paul on State Highway 218. High productive, level to slightly rolling, practically all tillable, about $46,000. in buildings, owner operated, poor health reason for selling. For full details, description and price write owner. J. F. WOLKOW, Farmington, Minn. 19-3

160 ACRE FARM: Two cement silos, a drive thru barn, milk house, combination hog barn and corn crib, large hen house, two good machinery sheds, modern home, orchard. Many other choice farms. THORNTON REALTY CORP. 16 S. Broad St. Elkhorn, Wis. 18-4

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FARM AVAILABLE MARCH 1st, 1958. An unusual opportunity for joint tenancy. 200 acre dairy farm. Lake Geneva, Wisconsin area. Modern House and barns. Good soil. Must have machinery. Buy half of herd. Good reference. Honest energetic party will do well. BOX 971, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

FARMS WANTED

WANTED TO RENT with option to buy, dairy farm for 300 to 400 cows. Complete with tenant houses in South Florida. Preferable Palm Beach County. Would consider buying personal property on farm. BOX 977, Care of Hoard's Dairyman, Fort Atkinson, Wis.

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MAKE $75 UP WEEKLY. Full or part time. Take orders for America's largest selling lignit fertilizer. Used by farmers since 1946. Liberal profits. No investment. Write "Na-Churs" Plant Food Co., 524 Monroe St., Marion, Ohio. 19-6

HELP WANTED

WANTED—Single man experienced machine and hand milking. Modern Jersey farm located in East. Top wages. BOX 687, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 8-*

MARRIED MAN for good sized dairy farm. No crop land, only hay and dairy. Farm has newly constructed house housing and milking parlor. Prefer man with family help. Background of dairy experience. Good wages and conditions. Reply as to size of family and other qualifications. BOX 976, care of Hoard's Dairyman, Fort Atkinson, Wis.

WANTED AN EXPERIENCED herdsman for a large purebred Guernsey herd, in the South. Must be experienced in all phases of herd management including artificial breeding. References required. BOX 969, care of Hoard's Dairyman, Fort Atkinson, Wisconsin. 20-2

EXPERIENCED, MARRIED DAIRYMAN wanted for milking and general farm work. New eight stall milking parlor, house housing, self-feeding bunker silos. Modern house, good wages. Please state experience and references in first letter. Write to WINDY KNOLL FARM, Crystal Lake, Illinois.

THREE-TIME MACHINE MILKER wanted, Guernseys, Florida. $70.00 weekly to start, house, milk, utilities. Want only ambitious, qualified man. BOX 970, care of Hoard's Dairyman, Fort Atkinson, Wisconsin. 20-2

WANTED, HERDSMAN, married man for Registered Holstein herd in North Central Wisconsin. Must be seriously interested in cattle and thoroughly experienced in milking for records and care of herd. Some help in family desirable but not necessary. Only industrious and sober man who can furnish satisfactory references desired. House and other perquisites, good salary and an opportunity to advance to right man. BOX 972, care of Hoard's Dairyman, Fort Atkinson, Wisconsin.

WANTED: SINGLE OR MARRIED man for working herdsman. Sober and steady. A good opportunity for a steady position with good pay and an opportunity for advancement to share can be possible to the right man. Furnish references in letter. Box 974, care of Hoard's Dairyman, Fort Atkinson.

WANTED: YOUNG MARRIED couple to work on Registered Holstein farm. Must be sober and industrious. References required. Good salary, house heat, light, milk, etc. furnished. Wite to care for milk room and help at milking time. BOX 973, care of Hoard's Dairyman, Fort Atkinson, Wisconsin.

POULTRY—BABY CHICKS—DUCKS

ROCKS, Reds, Hampshires, Hampings, Austra-whites, Leghorns, Minorcas, $6.99; Pullets, $12.99; Heavies $4.99; Surplus, $1.49. Catalog 50 offers. BUSH HATCHERY, Clinton, Missouri. 8-*

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RAISE ANGORA, New Zealand rabbits on $500 month plan. Plenty markets. Free details. WHITE'S RABBITRY, Delaware, Ohio. 13-*

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FOR SALE, top quality Wisconsin feeder pigs direct from farmers. All veterinary inspected. We handle only good pigs. Will fill any order large or small. CLARENCE ACKER, Middleton, Wis., Phone Terrace 6-3451. 18-*

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SPORTSMAN, choice selected straight Coon hounds, best trained Beagle hounds. Fox hounds, trial, reasonable. YOUNGBLOOD BROS., Gloucster, Ohio. 17-*

GENUINE English Shepherd and Collie Pups. Healthy and strong. Guaranteed leaders. Year's trial. Choice of sex. Spayed females a specialty. Priced right. CLOVERDALE KENNEL FARM, Ackley, Iowa. 18-*

DOGS

SPORTSMEN: Worlds largest kennels offers 500 Bird Dogs, Straight Cooners, Combination Hounds, Beagle Hounds, Rabbit Hounds, Small Squirrel Dogs, Fox and Deer Hounds, Catalogue free. SMOKEY MOUNTAIN KENNELS, Cleveland, Tennessee. 13-13

BORDER COLLIE puppies from imported working parents now available. Bloodlines are traced to Champion dogs registered in the International Sheep Dog Society of Great Britain. L. B. TOPLIFF, Route 1, Box #224, Libertyville, Illinois.

SHEPHERDS, Collies. Outstanding Heelers, Watch Dogs. ZIMMERMAN FARMS, G186, Flanagan, Illinois. 4-*

WORKING BORDER COLLIES. Imported parents. Puppies guaranteed. HOWARD McCLAIN, R6, Lima, Ohio. 2-*

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LEARN professional cake decorating. Details free. DECO-SECRETS, Venice 54, Calif. 14-*

FREE—Big new wholesale catalog! Up to 50% saving for you, family, friends on nationally-known gifts, jewelry, toys, appliances, Christmas cards etc. Also make money selling part time! Write EVERGREEN STUDIOS, Box #46-X Chicago 42, Illinois. 15-8

MISCELLANEOUS

NEED STATIONERY? You will like our livestock illustrations. We will print your order with your own breed on it. Write for stationery circular. HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin. 20-*

WANTED—Old electric trains, cast iron toys, Model boats, fire engine equipment and barn equipment, miniatures of all kinds, merry-go-rounds, auto and truck models. FRANK R. PARSONS, Box 13, Westboro, Mass.

PAINT—Factory prices, free samples. Snow White Co. Toledo 2, Ohio. Dept. HD. 20-3

DAIRY CATTLE

REGISTERED—Guernsey calves. K. V. FARM, Elkhorn, Wisconsin. 11-*

ARRIVING weekly from northern Wisconsin, choice Holstein springing heifers and cows. Satisfaction guaranteed. WILLIAM CLOW, Plainfield, Ill. phone 7-3252 or 7-3256. 10-12

REGISTERED Holstein calves. D. L. CAVEY, Elkhorn, Wisconsin. 11-*

HOLSTEIN springing heifers; also fall freshening heifers and younger heifers. CHESTER FROBERG, Valparaiso, Ind. Phone 4-5045. 18-3

KEATING BROTHERS FARM offers large selection fresh and springing selected cows and heifers, strictly quality. Dairymen—buying on order will save you time and money. Call or write Fort Atkinson, Wisconsin. Telephone JOrdan 5-5905. 18-*

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HOLSTEIN cows and heifers with production, type and sire from our foundation Wisconsin herds. Artificial breeding, calfhood vaccinated, Bang's and T.B. tested. PIPER BROS., Watertown, Wisconsin. Telephone 2170. 6-*

CHOICE HOLSTEIN cows and heifers. Call or write Whitewater Dairy Association. Fred Fieldman, DEAN HARNDEN, Whitewater, Wisconsin. Phone Palmyra 358. 2-24

300 HOLSTEIN cows and heifers to select from. Fresh, close up, and in all stages. You won't find as many good bagged and quality cattle on hand anywhere. In doubt? See for yourself. Buy a load of top cattle and be on your way within minutes. HARRY BIRGER DAIRY CATTLE CO., Rosemount, Minnesota. Phone 4521. 10-14

HIGH QUALITY Holstein and Guernsey Springers, yearlings, bred heifers and calves. Write or call for prices to J. W. and BILL GEURINK, Baldwin, Wisconsin. Telephone 322 or 21F31. 11-*

HOLSTEINS—Large selection of choice springers and fresh cows and heifers. TB and Bang's tested. STANLEY BURNTIDE & SON, "Grand Hotel for Dairy Cattle," Elgin, Illinois. (Hotel accommodations). Established 1910. Also good selection at Claremore, Okla. branch — Phone Claremore 116. 24-26

ATTENTION DAIRYMEN and cattle dealers. We can furnish you Holstein heifers to freshen this fall. Cows of all breeds. Let us know your needs. We can supply them. BOTTEMA FARMS, Bridgeport, Ind. Plainfield 8266. 20-*

BUY your dairy heifers from Wisconsin's largest dealers. Holsteins 15 cents per pound, Guernseys 14 cents per pound. If you need springing cows and heifers we can supply these also. LINK BROTHERS, INC., Mineng, Wis. 17-*

SOUTH WESTERN distributor of top northern dairy cattle fresh and springers. R. K. (BOB) MILLER, Guthrie, Oklahoma. Phone Butler 2-3435. 17-*

HOLSTEINS—Choice Minnesota and Wisconsin tested heifers, all ages at lowest prices. Several hundred on hand at most times. Also steers. ED HOWEY, So. St. Paul, Minn. 15-4

KENYON BROTHERS FARM serving the dairy farmer for forty years. Large selection of choice Holstein cows and first calf heifers, fresh and close springers, service bulls. T.B. and Bang's tested. In carload or truckload lots. KENYON BROTHERS CO., Elgin, Illinois. Phone SHerwood 1-1818. 19-*

WISCONSIN'S FINEST high production dairy cattle—cows and heifers—all ages. W. H. LEHMANN, Route 4, Watertown, Wis.; Hot Springs, Arkansas, Branch: George Paul, Mountain Valley Route. 19-2

REGISTERED AND GRADE Canadian and Wisconsin Holstein heifers, open and heavy springers, calfhood vaccinated, T. B. and Bang's tested. TWO JIMA FARMS, Sperlington, Kentucky. Phone 5606. 19-2

REGISTERED Holstein cows, heifers. Certified, Accredited. PAUL VAN CLEVE, Littlestown, Pennsylvania. 8-*

GUERNSEY BULL born May 16, 1955. Dam made 1022 lbs. butterfat and over 19,000 lbs. milk in 365 days on 2x. MONROE E. CLARK, Lewistown, Missouri.

NORTHERN dairy cattle. Registered or select high grades. Direct from quality herds. R. F. CULLEN, Amery, Wisconsin. 14-*

MORE SPECIAL OPPORTUNITIES ON NEXT PAGE

Special Opportunities

DAIRY CATTLE

CHRISTENSEN COMPANY, Dairy Cattle. Choice Holstein, Guernsey and Brown Swiss cows and heifers, fresh, or close springers. Large selection on hand at all times. L. C. CHRISTENSEN & CO., Abbotsford, Wis. Phone BL 6-6131 or BL 6-6175. 17-6

CALUMET "400" HOLSTEIN SALE. 11:00 A.M., Saturday, November 2, Chilton, Wisconsin. 62 head. For free catalog, write COUNTY AGENT, Chilton.

CANADIAN registered Ayrshire, Holstein, and Guernsey springer cows and heifers. Accredited. Vaccinated. PEARSON BROTHERS, Avonsyde Farms, Waterdown, Ontario, Canada. 18-spl

CANADIAN Registered Holsteins—Young vaccinated cows and heifers. Buy direct from the farms. Elgin County Holstein Breeders Club, DON SIGRE, R.R. #6, St. Thomas, Ontario, Canada. 4-spl

HOLSTEIN COWS and springer heifers, T.B., blood tested, one or a carload. Twenty five years in business. JOE MACKEY, 6016 West 65th Terrace, Overland Park, Kansas. Phone, Hedrick 25956.

WISCONSIN DAIRY COWS and heifers. All ages. Vaccinated. 500 to 600 lb. heifer calves, four head lots. On hand all times. DR. HARRY T. LARSON, Route 2, Ashland, Wisconsin. 20-6

Sales Announcements

October 26, 1957—Holstein—Harvest of Stars Sale—10:30 A. M., Fox Valley Livestock Center, St. Charles, Illinois. For catalogs and information write: Illinois Holstein Association, % Robert B. Howard, Secy., Dundee, Illinois.

October 28, 1957—Guernseys—Wisconsin State Guernsey Sale—8 a l e Pavilion, Waukesha, Wisconsin. Monday. Sale managed by Wisconsin Guernsey Breeders Association and Deibert H. Kingston & Associates.

October 28, 1957—Guernseys—Wis. State Sale—Monday—Sales Pavilion, Waukesha, Wisconsin. Starting at 12:30 noon CST. Sale managed by Wisconsin Guernsey Breeders' Assoc. Waukesha, Wisconsin and Deibert H. Kingston & Associates, Box 404, Cary, Illinois.

October 29, 1957—Guernseys—La Crosse County Breeders 42nd Annual Fall Sale, West Salem, Wis. Tuesday. High Grade and Registered Guernseys. Vilas Young, Sec'y., West Salem, Wisconsin.

October 30, 1957—Guernseys—Minnesota State Sale—Fairgrounds—New Ulm, Minnesota—Consignments from Minnesota's Leading Breeders and those from surrounding states. For catalog write: L. V. Wilson, Route 1, Owatonna, Minnesota.

November 2, 1957—Jerseys—Iowa State Sale, Cedar Rapids, Saturday. At All Iowa Fair Grounds—12:30 P. M.—50 head. For catalog write: Ivan N. Gates, Sale Mgr. West Liberty, Iowa—Auctioneer: C. E. Cunningham. Financed by Thorp Sales Co. Rochester, Minn.

November 2, 1957—Holsteins—Florida State Sale—Mayo Pavilion—Belle Glade, Florida. Sale sponsored by Florida Holstein-Friesian Club. M. B. Nichols, Sales Mgr., St. Charles, Illinois.

November 4, 1957—Holsteins—U. S. National Blue Ribbon Sale, Monday, Waukesha, Wisconsin. Sale starts at 11 A. M. sharp. 75 Purebred Registered Holsteins. Selected from eight states. To insure catalog in advance of sale, send 50 cents to W. L. Baird Company, Box 177, Waukesha, Wisconsin.

November 4, 1957—Holsteins—Logwood—Pond View Biannual Production Sale, Monday. At Logwood Farms, 8 miles north of the city limits of Baltimore, Md. on Route 140 or at the south edge of Reisterstown, Md. 11:00 A. M. Accredited and Certified. C. B. Smith, Sales Mgr. & Auctioneer, Williamston, Michigan.

November 6, 1957—Jerseys—Annual Fall Sale to be held at Fairgrounds, Greencastle, Indiana, beginning at noon CST. Indiana Jersey Cattle Club.

DISPLAY

OWN A CHESAPEAKE

Wonderful hunting companions both afield and in heavy duck marshes. Efficient, willing, hard working. Fine with children. Write for new booklet and name of nearest breeder.

AMERICAN CHESAPEAKE CLUB
906 North 8th Street, Boise, Idaho

AYRSHIRES

MOST PROFITABLE COWS

4% MILK

Big Milkers - - Hardy Rustlers
Good Grazers - Perfect Udders

Ayrshire Breeders' Association
70 Comer St., Brandon, Vt.

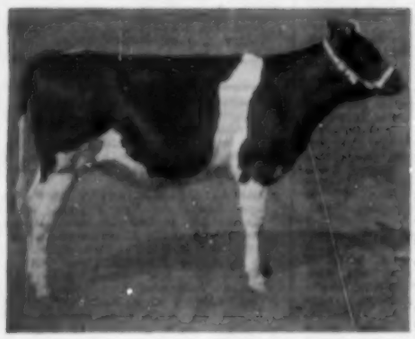
LOOK AHEAD! You can save on shipping costs by selecting a young bull calf from our production tested, type classified herd. We will be glad to send pedigrees and prices on request.
STRATHGLASS FARM, Box 71, Port Chester, N.Y.

NOW YOU CAN BUY
POLLED AYRSHIRE BULL CALVES

That are from high producing families
That are of Carefree Farms & Pennhurst Breeding
That give you excellent type calves
That are priced at prices sure to please

WRITE FOR PEDIGREES AND PRICES
CAREFREE FARMS NEW HAVEN, INDIANA

THE ABS PROVED SIRE BREEDING PROGRAM



A daughter of Pabst Romer Duke 1000390 who placed First in a class of 122 Holsteins at the Minnesota State Fair 1956.

"Romer's" 22 daughters in his proof ave. 14,835 M 4.13% test, 613 BF, an increase of +2,910 M +.06% test +128 BF over dams. Romer is a good representative of all A.B.S. Sires Proved Great.

The sure way to planned dairy-herd improvement . . . higher production, improved breed type, and increased constitutional vigor—plus the ability to transmit these desirable characteristics—are bred into every daughter of ABS bulls!

You can insure consistent dairy-herd improvement by using a succession of American Breeders Service great Proved Sires. Every ABS Sire is proved to increase average daughter production over average dam production!

Always Looking for Great Sires and Top Technicians
AMERICAN BREEDERS SERVICE
325 N. WELLS ST., CHICAGO 10, ILL.
Serving Breeders in 43 States. Studs at Carmel, Indiana, Madison, Wisconsin, Palo Alto, California

A SON OF JUBILEE

HY CREST ADVANCER, born May 2, 1957, is sired by HyCrest Diamond Jubilee, "Ex" Grand Champion, Ohio State Fair, 1957, Grand Champion, Michigan State Fair, 1956, Junior and Reserve Grand Champion, Eastern State Exposition, 1956. HyCrest Leachenic, "V.G." 805 lb. fat 4 yr. old daughter of Royal Nick, from our powerful Gretchen family is Advancer's dam. Write today for price and Pedigree. Advancer can do you a lot of good.
HYCREST FARMS, P.O. Box 366, Leominster, Mass.

Rating on daughters of our homebred sire Pixy's Challenger show 11,850 lb. milk, 603 lb. fat, 2x, 305 day, m.e. basis. This is on their first five completed records. We have sons of his for sale from top production tested and classified cows. Your inquiry will receive a prompt reply.
CHAS. S. KELLY Pixy Farm — **DAVID KELLY** Hudson, Wisconsin

Mountain Ayr Ayrshire Dispersal

13 miles East of Knoxville, Tenn. on Washington Pk. Lunch to be served.

SATURDAY, NOVEMBER 16
at 11:00 A.M. Sale Held Under Cover

80 Registered Ayrshires 40 in milk by sale date. 1-4 yr. old bull, 1-1 yr. old bull, 15 open heifers, 25 yearling heifers.

TVA & I Fair, Knoxville 1957—Junior Champion Heifer, Grand Champion Cow, Reserve Grand Champion Cow, Grand Champion Bull from our herd.

190 acre farm and complete line of machinery for sale at private treaty.

Phone or write for catalog:
CHARLES E. MINK, Route 3, Corryton, Tennessee—2-7215 or 6-5035.

Brown Swiss at Auction

THE CLAYTONDALE FARM COMPLETE DISPERSAL

HERMAN & GLADYS CLAYTON, OWNERS

Monday, November 4, 1957 (on the farm) Sidney, Ohio

65 HEAD * 8 BULLS * 57 FEMALES

A Leading Production and Show Herd. T.B. Accredited & Bangs Certified. High producing cows with their families sell. All the noted show animals sell. The bull offering includes 2 excellent herd sires and 1 outstanding Junior herd sire.

Rudy's Bonny Fair Farm COMPLETE DISPERSAL

Wednesday, November 13, 1957 At the farm near **Kenosha, Wis.**

75 HEAD — 1 Bull * 74 Females * 38 Cows * 35 Heifers

A well bred herd with production testing.

The 10th IMPERIAL SALE

Friday, November 15, 1957, Waukesha, Wisconsin

11 A. M. SALE PAVILION

52 HEAD * 5 BULLS * 47 FEMALES

A sale of the Best Breeding from the Nation's Leading Breeders. A sale designed to assure Brown Swiss Progress.

The above sales are under the management of and catalog upon request from
NORMAN E. MAGNUSSEN Brown Swiss Sales Service Telephone 9-2118 **LAKE MILLS, WISCONSIN**

WHAT BROWN SWISS HAVE TO OFFER

Whether you are an old breeder, or a new breeder contemplating entering the ranks of the breeders of purebred Brown Swiss cattle, you are interested in the future of Brown Swiss cattle. Interest in Brown Swiss cattle is growing more rapidly today than in any other dairy breed in America. The reason for this is that Brown Swiss have proved themselves to be what real dairy farmers want.

Farmers today are more widely interested in Brown Swiss cattle than ever before. The number of animals registered, the number of sales of breeding stock, the number of inquiries from all parts of the country each year are greater than the year before.

For more information about the breed write:
BROWN SWISS ASSOCIATION, Beloit, Wis.

IOWA JERSEY STATE SALE

CEDAR RAPIDS, IOWA

SATURDAY NOV. 2ND

At All Iowa Fair Grounds—12:30 P. M.

50 Head-High Quality Reg. Jerseys

Selected from Iowa's Best Herds. Choice Young Cows—Fresh or Heavy Springers. Close up Bred Heifers, Open Heifers, 2 Young Bulls. Many calfhood Vacc. All TB and Bang's Tested.

For Catalog write:
Ivan N. Gates, Sale Mgr., West Liberty, Iowa
Auctioneer—C. E. Cunningham. Financed by Thorp Sales Co., Rochester, Minn. (Pay 25% down, balance on Monthly Payments)

Choice Dairy cows and heifers. Jerseys, Guernseys, Shorthorns, Holsteins. Fresh and coming fresh soon, all T.B., Bang's tested. Come and make your selection, or will fill your order, or help you buy.
CLAUDE THORNTON, R.#2, Box 258, Phone 4-1869, Springfield, Missouri.

Brigham Jerseys . . .

BUSINESS is GOOD!

One great Jersey State — Ohio—has recently become the home of three bull calves selected at Brigham Farm . . . a Very Good, Senior Superior Sire, L.R.U. Edan, has been purchased by the Michigan Artificial Breeding Association, and they are shipping frozen semen to the Northern Ohio Breeders Association . . . No less than two Brigham bulls previously sold to Ohio Breeders are shaping up as Superior Sires.

BETTER BUY PRODUCTION!

THAT'S WHERE THE PROFIT IS!

BRIGHAM FARM ST. ALBANS VERMONT

Buy More U. S. Savings Bonds.

MACK MANOR FARM JERSEY DISPERSAL

SATURDAY, NOV. 16, 1957 .. ORLAND, INDIANA

125 HEAD ★

TB and Bangs accredited
Calfhood vaccination has been practiced

Featuring the Excellent 4 yr. old bull, MEADOWRIDGE SUPREME, A son of Pinnacle Royal Lady Aim with a record of 14,163 lbs. milk and 812 lbs. fat. Cows with records up to 17,987 lbs. milk and 967 lbs. fat.

PRIZE WINNERS — TON OF GOLD COWS — EXCELLENT COWS

FOR CATALOG WRITE
CHESTER FOLCK & SONS, SALES MANAGERS
4810 S. YELLOW SPRINGS RD. SPRINGFIELD, OHIO

JERSEY SALE Annual Fall Sale, fresh & heavy springers, to be held at Fairgrounds, Greencastle, Indiana, November 6, 1957, beginning at noon, CST. INDIANA JERSEY CATTLE CLUB.

FREE

GOLDEN GUERNSEY MILK
THE REAL KEY TO
GREATER DAIRY PROFITS
Only Guernseys produce GOLDEN GUERNSEY Milk, nationally-advertised to insure ready markets and real profits. Write for free facts.
THE AMERICAN GUERNSEY CATTLE CLUB
732 Main St., Peterborough, N. H.

IDEAL FARMS
PUREBRED
GUERNSEYS

Why not be the proud owner of your own herd sire? We have many out of 700, 800, or 900 lb. dams. Breeding stock you are looking for. State your wants, better yet, come and see for yourself. The World's Greatest Production Herd. Prices reasonable.

IDEAL GUERNSEY FARMS
AUGUSTA NEW JERSEY

MINNESOTA STATE
GUERNSEY SALE
FAIRGROUNDS
NEW ULM, MINNESOTA
OCTOBER 30, 1957
40 Females 4 Bulls

Consignments from Minnesota's Leading Breeders and those from surrounding states
For Catalog Write
L. V. Wilson Rt. 1 Owatonna, Minnesota

FOR SALE

Choice, well-bred heifers due in early Fall, yearling heifers and heifer calves. By proven sires out of A. R. cows with good records and from proven cow families. Also young bulls ready for service out of Class Leaders 2x milking. Pedigrees with full description on request.

TARBELL GUERNSEY FARMS
SMITHVILLE FLATS, NEW YORK

Choice registered Guernsey bulls by proven sires, such as HORSESHOE CONRAD ASTERBILT and out of at least 550 pound dams, for sale. Large selection to choose from, serviceable age and younger. Calfhood vaccinated. Bang's free, TB accredited herd. Write or visit us for pedigrees and full particulars.
BRANDTJEN FARMS, Farmington, Minn.

★

Liberty Bell Farm
LIBERTYVILLE, ILLINOIS

COMPLETE . . .
GUERNSEY DISPERSAL
Monday, November 18 At the Farm
★ 73 HEAD ★

35 milking females, balance bred and open heifers. 19 daughters of Fairlawn Courteous Prince. A choice lot including National Class Leaders. A herd of heavy producers.

Catalogs on request to ILLINOIS GUERNSEY BREEDERS ASSOCIATION, BATAVIA, ILL.
Sale managed by Delbert H. Kingston and Associates, Gary, Illinois

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★

WISCONSIN STATE
GUERNSEY SALE
Monday, Oct. 28, 1957
SALES PAVILION
WAUKESHA, WIS.
Starting at 12:30 Noon CST
FIFTY HEAD

For over fifty years, Wisconsin has been providing Guernsey seedstock to the rest of the nation. Many outstanding individuals from farmer breeder herds have gone through previous "State Sales." The cattle in this year's sale are no exception.

Selling is a pair of maternal sisters that are a couple of real show cows that would make an excellent produce, that will stand a lot of competition.

Bull consignments are from McDonald Farms, New York; Elderwood Farms, Wisconsin; Golden Knoll Farms, Wisconsin; Wern Farms, Wisconsin; and Rolling Acres Farm, Illinois.

SALE MANAGED BY
Wisconsin Guernsey Breeders' Assn., Waukesha, Wisconsin
and
Delbert H. Kingston & Associates, Box 404, Cary, Illinois

GUERNSEYS
Waukesha County can furnish you with most any kind of Guernseys you desire—grade or pure bred. Lee Buringham, fieldman, at your service. **Waukesha County Guernsey Breeders' Assn., Waukesha, Wisconsin.**

JEFFERSON COUNTY GUERNSEY BREEDERS' ASSOCIATION
Guernseys . . . Registered and Grade Females, All Ages . . . **ALSO BULLS.** Free Service to Buyers. Call Lyle Kiesling at 804J1, Jefferson, Wisconsin.

GRANDVU GUERNSEYS
Offering select Guernsey bull calves up to serviceable age. **Sired** by McDonald Farms Pre Molvin, an outstanding type and production Sire. **Dams** are daughters of the great proved high production Sire, Flying Horse Masters Royal, large, type, good uddered cows with records up to over 10,000 lbs. milk, 550 fat as 2-yr.-olds, 305—3x milking. **Herd sires for club work for Sale,** the blue ribbon kind. **The Right kind at the Right price.** Write or come to **GRANDVU FARMS, Wrightstown, Wisconsin.**

Choice Herd Sire
PROSPECTS

A post card will bring you our sales list. Write for it now. Our herd has been on a sound breeding program for half a century. Come and visit us or write for descriptions and prices of our fine bull calves. DHIA yearly average 454.6 lbs. fat for 57.9 cows. One of our cows classified as Excellent twice, just finished a record of 813 lbs. fat at eight years, 2x, which places her 8th in the breed. Present sires: McDonald Farms Mister Dairyman, Leeside Dairyman and Dairyman Favorite.

HOARD'S DAIRYMAN FARM
FORT ATKINSON, WISCONSIN

HOLSTEINS

CARNATION LOLA TILDA WALKER "VG"

2-3	3x	305d	16,430	640.1	3.9%
3-5	3x	305d	14,696	665.0	3.8%
4-6	3x	321d	17,806	643.0	3.6%
5-7	3x	136d	10,501	368.0	Record still in progress — should make over 800 lbs.

HER SON BY BUTTER BOY NOW AVAILABLE

We are now offering a beautiful son of our great Excellent Silver Medal type sire Carnation Madcap Butter Boy from the outstanding cow pictured above. He is dark in color, beautifully marked and has unusual type and quality.

Carnation Madcap Butter Boy is proving to be a truly great sire. His first 16 classified daughters as first and second calf heifers average 86.6 points with 10 "Very Good," 7 "Good Plus" and 1 "Good." At the recent Western Washington Fair his offspring won first in both Junior and Senior Get of Sire and won almost every class in which they were entered. They are also producing wonderfully well.

Carnation Lola Tilda Walker, pictured above, dam of the calf being offered, is a wonderful young cow now promising over 600 lbs. standing in stanchion with just good herd care. She comes from one of the best families in our herd and is a daughter of Excellent Gold Medal Hallrose Progressor.

Here is a most unusual herd sire prospect. He should increase in value as his dam develops and his sire increases in popularity. He is Ear Tag B-399.

Write for pedigree and price.

Carnation Milk Farm

Address:
CARNATION MILK FARMS
Dept. # 117
Carnation, Washington

HOLSTEINS -- GUERNSEYS
Save time and money purchasing your dairy cattle from Ohio's Oldest Licensed & Bonded Distributors, at the Gateway to the South, where quality and honest dealings have prevailed for 108 years. Large selection high-Grade close-up and springing cows and heifers always available. TB & Bang's Tested; many Calfhood Vaccinated. Private sales and orders conscientiously filled. Farmer prices and trucking rates gladly quoted.

L. F. BROWN & COMPANY, Est. 1849
3151-99 Spring Grove Ave., Cincinnati 25, Ohio
Office Tel.: KIrby 1-5041 Night Tel.: Valley 1-8024

★ ★

This month we offer the calf pictured above born March 16, 1957, and sired by Wis. Spotlight. This calf is dammed by Cedar Park Prilly Cascade Lass (VG). She has two 305 day records of 14,584 and 15,151 lbs. milk and 521 and 547 lbs. butterfat, on 2x milkings at 2 and 3 years of age. She was also Grand Champion cow at Tennessee State Fair.

This calf should make someone a profitable herd sire. For price and pedigree write:

STOFFELL'S MILK FARM
Route 12 Knoxville, Tennessee

EUREKA FARMS

have a couple CARNATION BULLS old enough for light service and others that will be soon, all sired by our Carnation Rodger. Their dams in DHIA test since 1917. Those calves worth thinking about.

C. E. HURLBERT Stockton, Illinois

DELBERT H. KINGSTON & ASSOCIATES
Complete Sales Service . . . Auction and Private Treaty . . . Our listings include Proved Sires, outstanding bulls, cows, heifers. Also a few top show prospects. Fieldmen at your service. **Cary, Illinois —Box 404— Phone: MErcury 9-5531.**

Harvest of Stars SALE
October 26, 1957, 10:30 A.M.
FOX VALLEY LIVESTOCK CENTER
ST. CHARLES, ILLINOIS

50 carefully selected cows
10 4-H project heifers
5 outstanding bulls

This state sponsored sale has been noted for the outstanding individuals purchased here. It has been one of the top averaging sales for several years. The 4-H project sale is a great opportunity with a special reduction price attached.

For catalogs and information write:
ILLINOIS HOLSTEIN ASSOCIATION
% Robert B. Howard, Secy., Bundec, Illinois

FRANK LUHRS DAIRY COW MARKET
We have a large selection of high-producing Northern cows on hand.
SOUTH ST. PAUL, MINN. Glenview 1-1486

ART CAMENZIND'S
DAIRY CATTLE

200 to 300 head of quality springing Holstein and Guernsey heifers and young cows, year around. Picked for production, type and clean well formed udders. Herds bought and sold. Satisfied customers, lifetime experience. All cattle are well fed and cared for. Mostly calfhood vaccinated and all are tested. Springing heifers shipped on approval, or cattle may be seen anytime. Two miles northwest of

Irvington, Nebraska
ON HIGHWAY 133
PHONE OMAHA, GLENDALE 0091

Florida State
HOLSTEIN SALE
Mayo Pavilion
BELLE GLADE, FLORIDA,
NOVEMBER 2, 1957

Featuring 60 registered, springing Holstein heifers from top herds of Mid-West and Florida. Heifers are backed by outstanding production and type.

Sale sponsored by
FLORIDA HOLSTEIN-FRIESIAN CLUB.
M. B. NICHOLS, SALES MGR., ST. CHARLES, ILLINOIS.

HOLSTEINS
GUERNSEYS

Buy direct from farms where top production dairy cattle are raised. Over 300 to select from. Located in "Heart of Indiana's Dairyland," Kosciusko County. Experienced truckers available. Also Shetland ponies.

LAKESIDE DAIRY FARMS
Silver Lake, Indiana Telephone 3801-3804

SERVICE AGE HERD SIRE
We offer a very typy young bull born 8/13/56. He is a son of a proven sire and from a very good cow with lots of milk and type. The granddam has over 120,000 lbs. of milk and still going strong. Write or phone Carl Medsker, 8R10 Graysville.

MEDSKER FARMS SULLIVAN, INDIANA

JEFFERSON COUNTY
HOLSTEIN BREEDERS' ASSOCIATION
REGISTERED and GRADE HOLSTEINS
available from top DHIA accredited herds, many using artificial breeding. Heifers at all ages, good young cows.
Free fieldman services. Write-wire-phone for prices!
WILL BETSCHLER, Fieldman
Ph: JOrdan 3-2329 Office in Black Hawk Hotel
Residence, Sullivan, Wis. Ph: 29-J-31

GOLDEN GRANGE GUERNSEY DISPERSAL
NOVEMBER 11th and 12th
AT FARM-6 MI. SOUTH OF HUNTINGTON, IND.
271 REGISTERED GUERNSEYS *at Auction*

T. B. Accredited — Calfhood Vaccinated and Neg.

87 cows have 143 AR records that ave. 13509—674 B.F. 30—2 yr. olds on test, making comparable records. 191 cows appearing on Dams side of Pedigrees in catalog have 251 AR records that average 13142—637 B.F.

In sale: 70 daughters of McDonald Farms Augusta's Ideal, 30 daughters of McDonald Farms Steadfast Paul, 22 daughters of Golden Grange Ideal King, 13 daughters of Langwater Vindicator, 21 daughters of Golden Grange Petunia's Verner, 6 top sons of McDonald Farms Augusta's Ideal, 35 other young bulls—3 nearest dams have records averaging from 650 to 750 lbs. B.F. 271—all except about 15 bred at Golden Grange Farms.

Catalogs on request.

EVERETT R. BEATY, Owner, HUNTINGTON, INDIANA

REGISTERED HOLSTEINS

fit the farm...

fit the market...

Sign of the Times

REGISTERED HOLSTEINS PRODUCE LONGER!

Registered Holstein leadership is shown in the dynamic progress and steady advancement made possible by extensive official breed improvement programs.

More than 80,000 Registered Holstein cows are now on official production test. Well over 30,000 will be officially classified for type this year.

Recently, the 10,000th herd was enrolled in these constructive programs — an unparalleled achievement reflecting nearly 30 years of progress in improving both the type and the production of the Registered Holstein cow.

Big, deep-bodied REGISTERED HOLSTEINS have the size and capacity to handle today's big tonnages of quality roughage — the cornerstone of economical feeding — at top efficiency. REGISTERED HOLSTEINS fit the farm!

REGISTERED HOLSTEINS are big producers of the milk today's consumers demand — moderate-fat milk for refreshing good taste and trim good health. REGISTERED HOLSTEINS fit the market!

REGISTERED HOLSTEINS produce the kind of milk consumers want to buy from the kind of feed that costs you less to raise.

HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA

BRATTLEBORO, VERMONT

Registered HOLSTEINS *Breed of the Times*

DO YOU WANT Size and Good Udders?

ANKER ADMIRAL BURKE PAUL
(BORN MAY 9, 1956)

A double grandson of Anker Fobes Admiral, Silver Medal Prod. Sire with USDA proof plus 103 fat on 13 pairs. Sired by Anker O'Burke Danny, son of the Excellent Anker Admiral Dream Girl Dolly, 608 fat, 16,709 milk, and of a Comet grandson.

Dam, Anker Pearl Admiral, also a daughter of Anker Fobes Admiral, with 653 fat, and 18,156 milk at 8 yr. 9 mo. Pearl is VG, 87 points with Excellent mammary system. Danny's sire combines the blood of Comet, Roburke and the old Anker "Hope" cow whose dam had 21,175 milk and 763 fat, 4%.

We have other bulls of all ages, dams and granddams up to 1084 lbs. fat. Breeders of bulls for you. All records under ordinary good farm care. Write for pedigree and price.

ANKER FARMS
REGISTERED HOLSTEINS
RICE LAKE, WISCONSIN

---

16 GOLD MEDAL SIRES BRED BY US

Two latest—Wisconsin Ideal and Wisconsin Masterpiece—both Excellent and Gold Medal.

Wisconsin Maestro, bred by us and recently sold in Osborndale Sale for $30,000.00, is a direct descendant of both these great sires.

These bloodlines are intensified in all our institution herds. Choice young bulls available.

FOR INFORMATION WRITE TO

W. W. KINYON, Farm Supervisor
Department of Public Welfare
State Capitol, Madison, Wisconsin

FOX RIVER VALLEY HOLSTEIN BREEDERS ASSOCIATION

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LOGWOOD-POND VIEW

HOLSTEIN BIANNUAL PRODUCTION SALE

MONDAY, NOVEMBER 4th

at LOGWOOD FARMS, 9 miles north of the city limits of Baltimore, Md. on Route 140 or at the south edge of Reisterstown, Md. Sale starts at 11 o'clock A.M. sharp.

This sale will feature the blood of the many Grand Champion Show cattle and the great production of both herds. The average production of every animal in the sale with over 600 lb. fat—all on 2X—either on the animal or their dams. Both herds have gone into the heart of their breeding program to sell cattle that will build a reputation for the future. From Pond View—the undefeated heifer calf at all the Maryland shows in 1957. From Logwood—the Res. All-Am. 2-yr.-old 1954—Logwood Nugget Flo, she a daughter of the "Ex." Grand Champ., Res-All-Am. Aged cow in 1955, who has 972 lb. fat on 2X. Also selling is a son of this "Ex" cow—a maternal brother to Flo. This sale will feature 6 of the most outstanding bulls to be sold in N. A. this year together with 55 females—every one of foundation caliber. This is a sale that does not require an expert to buy the kind of herd building cattle you need. Accredited and Certified.

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A son of Fresco Ideal Pilot, Silver Medal Type Sire, whose first 25 classified daughters, as 2 and 3-yr-olds, average 85 points—from Carnation Skylark Wayne, classified "Excellent," with 25,636 lbs. Milk—1045 lbs. Fat, with a 4.1% test. She is the dam of the All-American heifer calf of 1955. **(Carnation Farms)**

A son of Wis Symbol from a "Blackberry" dam. This is the blood that produced MAESTRO, the $31,000 bull. **(Wisconsin State Reformatory)**

A son of The Duke of Zeldenrust, whose dam is the famous "Corrine" cow, and from Franie Antony Leona, classified "Excellent," with 24,406 lbs. Milk—1019 lbs. Fat—4.2% test. **(Ray Bottoms)**

A son of Pabst Regal, "Ex-GM" with 6 proven sons and out of a daughter of "Roamer" with 24,970 lbs. Milk. **(Pabst Farms)**

AMONG THE FEMALES IS an 800-lb. Fat daughter of Wis Burke Ideal, classified 87 points. **(Elmer Dowdy)**

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Two daughters of Pabst Sir Roburke Rag Apple. **(Allen and John Hotts)**

A daughter of Carnation Revelation Emblem, from a dam with 20,820 lbs. Milk as a 4-yr-old. **(Carnation Farms)**

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A yearling daughter of Plain View Marcella who was a member of the Reserve All-American "Get" by Wis Leader in 1955. **(Bristol Farms)**

A daughter of Mayfog Ormsby Fobes Dictator, "Gold Medal-Excellent" sire—sire of the "Star" cow that sold for $4500. in the National Convention Sale of 1956. **(John A. Newman & Sons)**

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Prevent cows from sucking

Many devices are in use. If the ones you have tried are not satisfactory, here are ideas that have worked in many herds.

by E. A. Woelffer, D.V.M.

COWS and heifers that suck themselves or other animals are a problem. When discovered in some herds, such an animal is sold immediately for slaughter. Usually the animal is a good one and the owner often hesitates to sell it.

Various homemade and commercial devices are used to prevent sucking. Usually some type of device is effective.

Occasionally there is an animal for which an effective preventive cannot be found. If you have a problem animal, probably one of the following methods may overcome the sucking habit.

Nose ring effective . . .

One quite successful device is a homemade ring for the nose, which can be made as follows:

Buy some 3/16 or 1/4-inch copper wire at an electrical supply store. Cut off a piece 16 inches long and sharpen both ends. Bend the middle of the wire around a 2½-inch pipe to form a staple. Place it in the animal's nose like you would a bull ring. Bring the two ends together with one twist and, with pliers, bend the ends forward and upward at right angles so when the animal attempts to suck, it will prick itself or the animal it tries to suck.

Sometimes merely placing a baling wire in the nose, similar to the above method, will prevent sucking, particularly in younger animals.

Another method is to place a bull ring in the cow's nose and hang one or two smaller ones in it. There are several commercial anti-sucking devices designed for the animal's nose. Generally, they are effective, also.

Prevent turning head . . .

Another desirable device for the self-sucking cow is made by placing a surcingle around the animal's chest behind the front legs. A ring is fastened at the bottom to which is attached a sawed-off fork handle or similar stick. The other end of the stick is attached to a ring in a leather halter.

The stick should be long enough that when the animal is in a standing position, the head also will be in a normal position. With the apparatus in place, the cow can eat and drink without difficulty but is unable to turn her head around to suck herself.

A somewhat similar device for the self-sucking animal can be made by placing a homemade cradle around its neck. This device can be made from pieces of broom handles sawed several inches shorter than the cow's neck. These pieces (or stays) are fastened to two leather straps and the "cradle" is placed around neck of animal.

This device is held in position by fastening it to a leather surcingle around the cow's chest.

Hog rings in tongue . . .

Another relatively successful method is to place two hog rings crosswise on the bottom side of the tongue. They should be placed as far back as possible, about an inch and a half apart. This method prevents cupping of the tongue.

To prevent sucking in heifers and cows, one reader suggests cooking to a thick consistency powdered cape aloes in a small amount of water. The paste is applied to the teats and udders with a wooden spoon or paddle. Usually three treatments will effect a cure. Chronic suckers may require additional applications.

Can use surgery . . .

If everything else fails, some type of surgery may be necessary. One operation consists of removing one side of the tip of the tongue for a few inches, thus making it impossible for the tongue to be wrapped around the teat.

In another operation a groove is cut at the median line at the bottom of the tongue and sutured so the tongue cannot be cupped. These operations should be performed only by a veterinarian. Either a general or local anaesthetic should be given to prevent pain to the animal. Such an operation should be attempted only as a last resort.

To what degree is fertility inherited?

In choosing dairy animals for breeding purposes we select herd sires from families distinguished for high level milk production. This is because we know milk-producing ability is inherited.

On the other hand, how much weight should we give to reproductive performance? To what degree is fertility inherited?

In order to attempt to shed some new light on this matter, three members of the Rutgers dairy department analyzed the records of the Holstein-Friesian herd of the Overbrook Dairy in Cedar Grove, N. J. They were Charles W. Wilcox, Jr., K. O. Pfau, and J. W. Bartlett.

A period from 1923 to 1953 was studied, during which time 575 females entered and left the herd. The Overbrook herd was considered especially suitable for this study because of the sound managerial practices which had been carried on throughout the 30-year period.

It is only when managerial practices are good that an individual animal can present a true picture of its own merit. For example, poor feeding practices mask the true ability of each cow and, therefore, genetic influences are overshadowed. Evidence of sound managerial practices in the Overbrook herd lies in its yearly herd average over the 30 years of more than 15,000 pounds milk, 500 pounds fat.

The Rutgers dairy research men found that in the Overbrook herd, 30 per cent of the variation between individuals in reproductive performance can be attributed to their genetic make-up.

Most contemporary studies of this matter have not resulted in such a high estimate, but the Rutgers men point out that very probably none were carried out on a herd which was as desirable for heritability studies as Overbrook.

VETERINARY COLUMN

E. A. WOELFFER, D.V.M.

Pitch poisoning

Recently we were visiting on a farm where a pasture for cows had been established on an area that had been previously used by a gun club. The owner was concerned about whether cows can be poisoned if they should accidentally eat portions of clay pigeons.

Since we have had no experience, and information in the literature on the subject appears to be absent, we couldn't answer the question. We are inclined to believe that cattle are not poisoned by this material.

While on the subject, it should be pointed out that hogs are very susceptible to pitch poisoning. Experimentally it has been found that if only 10 to 12 grams of clay pigeons are consumed over a period of six days, the hogs will die.

Pastures contaminated with clay pigeons are dangerous over long periods; in fact, deaths have been reported 35 years after such pasture contamination.

Following ingestion of clay pigeons, the usual onset of the disease in hogs is so sudden and the course so rapid that few symptoms are observed. Some animals are ill only a few hours; other do not die until several days later.

The first signs are depression and weakness. The animal usually dies in a sternal (upright) position while lying down.

The most characteristic lesion is a markedly swollen liver which has a distinct and mottled appearance. The carcass is generally quite yellow and there are large quantities of fluid in the pericardial, pleural, and peritoneal cavities.

Hogs are similarly susceptible if they eat other pitch or bitumen-containing products such as roofing materials, certain types of tar paper, and plumber's pitch.

There is no known treatment for these poisonings.

"MENSTRUATION" BY THE COW

I read your article, "About genital discharges," in the June 25 issue and would like to have you give a detailed explanation of "menstruation" by the cow. In your article you refer to the appearance of blood without detail.

I would like to have you answer some of the following questions, plus any other information on this portion of the heat period that you may feel is of importance.

1. Where does the blood of "menstruation" originate? (I have been told by veterinary authorities that it comes from the ovary and that it comes from the walls of the uterus.)

2. Does menstruation definitely indicate an egg has been released by the ovary? Or can menstruation take place without release of an egg?

3. If there is a definite tie-in between release of an egg and menstruation, does a lack of menstruation indicate that no egg has been released by the ovary?

4. If the cow does not menstruate every time that an egg is released from the ovary, what percentage of times would you say this occurs?

5. Some cows menstruate a little; others menstruate a lot. Can amount of menstruation interfere with conception or indicate some difficulty?

6. I have observed that a large percentage of cows menstruate about 1½ to 2 days after onset of standing heat. Others are as late as 3½ to 4 days after standing heat is noticed. Is this abnormal? (It seems to go with conception problems.)

7. Is it possible for a cow to menstruate after she is in calf?

Hazel Green, Wis. A. M. H.

Post-estrus bleeding, or so-called menstruation, in the cow results from a breakdown of congested capillaries from the swollen endometrium and caruncles (buttons) of the uterus. When bleeding from the vulva is first observed, it usually indicates that estrum terminated 24 to 48 hours previously, that ovulation occurred 15 to 36 hours beforehand, or that the onset of estrum took place 40 to 60 hours previously. It is doubtful if bleeding has any direct connection with release of the egg in the ovary.

Insofar as is known, all females show intrauterine bleeding but not all show clinical evidence at the vulva.

It is doubtful if the amount of clinical bleeding or the time of bleeding has any bearing on the ability to conceive.

Uterine bleeding apparently can take place during pregnancy. It may be limited to one or more caruncles, or it may be so extensive that death of the fetus occurs. If the cervical canal is tightly sealed, which is usually the case, blood will not be observed at the vulva.

It is a rather common belief by farmers and herdsmen that post-estral bleeding following service is an indication that conception did not occur. Careful studies and observations indicate, however, that the appearance or absence of blood at the vulva does not influence conception.

SORE ON UDDER

I have a cow that freshened around the last of July and after quite some time we noticed a sore in the center of her udder. In addition to drainage, this sore has quite an odor.

The veterinarian calls it a fungus infection and he gave me some powder to use on it. After treating the sore for two weeks, I cannot see any improvement. Possibly you can help me.

Tigerton, Wis. R. H. M.

Sores between the fore quarters of the udder, such as you describe, generally are quite difficult to clear up. We have found a product called Cerbinol to be quite effective. The lesions are first washed with soap and water, dried, and then the Cerbinol is applied. Applications are made once or twice a day until healing occurs.

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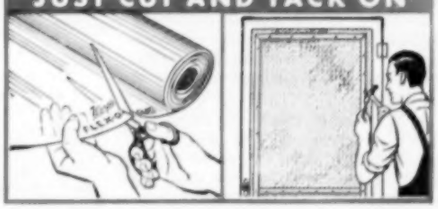

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